

# HEALTH SANITARY INSPECTOR

NSQF LEVEL - 3

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**TRADE PRACTICAL**

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SECTOR : HEALTHCARE

(As per revised syllabus July 2022 - 1200 Hrs)



Directorate General of Training

DIRECTORATE GENERAL OF TRAINING  
MINISTRY OF SKILL DEVELOPMENT & ENTREPRENEURSHIP  
GOVERNMENT OF INDIA



**NATIONAL INSTRUCTIONAL  
MEDIA INSTITUTE, CHENNAI**

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Post Box No. 3142, CTI Campus, Guindy, Chennai - 600 032

**Sector : Healthcare**

**Duration : 1 - Year**

**Trades : Health Sanitary Inspector - Trade Practical - NSQF Level - 3 (Revised 2022)**

**Developed & Published by**



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## FOREWORD

The Government of India has set an ambitious target of imparting skills to 30 crores people, one out of every four Indians, by 2020 to help them secure jobs as part of the National Skills Development Policy. Industrial Training Institutes (ITIs) play a vital role in this process especially in terms of providing skilled manpower. Keeping this in mind, and for providing the current industry relevant skill training to Trainees, ITI syllabus has been recently updated with the help of Media Development Committee members of various stakeholders viz. Industries, Entrepreneurs, Academicians and representatives from ITIs.

The National Instructional Media Institute (NIMI), Chennai, has now come up with instructional material to suit the revised curriculum for **Health Sanitary Inspector Trade Practical in Healthcare Sector under Yearly Pattern**. The NSQF Level - 3 (Revised 2022) Trade Practical will help the trainees to get an international equivalency standard where their skill proficiency and competency will be duly recognized across the globe and this will also increase the scope of recognition of prior learning. NSQF Level - 3 (Revised 2022) trainees will also get the opportunities to promote life long learning and skill development. I have no doubt that with NSQF Level - 3 (Revised 2022) the trainers and trainees of ITIs, and all stakeholders will derive maximum benefits from these Instructional Media Packages IMPs and that NIMI's effort will go a long way in improving the quality of Vocational training in the country.

The Executive Director & Staff of NIMI and members of Media Development Committee deserve appreciation for their contribution in bringing out this publication.

Jai Hind

**SHRI.ATUL KUMAR TIWARI., I.A.S.,**  
Secretary  
Ministry of Skill Development & Entrepreneurship  
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New Delhi - 110 001

## PREFACE

The National Instructional Media Institute (NIMI) was established in 1986 at Chennai by then Directorate General of Employment and Training (D.G.E & T), Ministry of Labour and Employment, (now under Directorate General of Training, Ministry of Skill Development and Entrepreneurship) Government of India, with technical assistance from the Govt. of Federal Republic of Germany. The prime objective of this Institute is to develop and provide instructional materials for various trades as per the prescribed syllabi under the Craftsman and Apprenticeship Training Schemes.

The instructional materials are created keeping in mind, the main objective of Vocational Training under NCVT/NAC in India, which is to help an individual to master skills to do a job. The instructional materials are generated in the form of Instructional Media Packages (IMPs). An IMP consists of Theory book, Practical book, Test and Assignment book, Instructor Guide, Audio Visual Aid (Wall charts and Transparencies) and other support materials.

The trade practical book consists of series of exercises to be completed by the trainees in the workshop. These exercises are designed to ensure that all the skills in the prescribed syllabus are covered. The trade theory book provides related theoretical knowledge required to enable the trainee to do a job. The test and assignments will enable the instructor to give assignments for the evaluation of the performance of a trainee. The wall charts and transparencies are unique, as they not only help the instructor to effectively present a topic but also help him to assess the trainee's understanding. The instructor guide enables the instructor to plan his schedule of instruction, plan the raw material requirements, day to day lessons and demonstrations.

IMPs also deals with the complex skills required to be developed for effective team work. Necessary care has also been taken to include important skill areas of allied trades as prescribed in the syllabus.

The availability of a complete Instructional Media Package in an institute helps both the trainer and management to impart effective training.

The IMPs are the outcome of collective efforts of the staff members of NIMI and the members of the Media Development Committees specially drawn from Public and Private sector industries, various training institutes under the Directorate General of Training (DGT), Government and Private ITIs.

NIMI would like to take this opportunity to convey sincere thanks to the Directors of Employment & Training of various State Governments, Training Departments of Industries both in the Public and Private sectors, Officers of DGT and DGT field institutes, proof readers, individual media developers and coordinators, but for whose active support NIMI would not have been able to bring out this materials.

**Chennai - 600 032**

**EXECUTIVE DIRECTOR**

## ACKNOWLEDGEMENT

National Instructional Media Institute (NIMI) sincerely acknowledges with thanks for the co-operation and contribution extended by the following Media Developers and their sponsoring organisation to bring out this IMP for the trade of **Health Sanitary Inspector Trade Practical - NSQF LEVEL - 3 (Revised 2022)** under the **Healthcare** Sector for ITIs.

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NIMI records its appreciation of the Data Entry, CAD, DTP Operators for their excellent and devoted services in the process of development of this Instructional Material.

NIMI also acknowledges with thanks, the invaluable efforts rendered by all other staff who have contributed for the development of this Instructional Material.

NIMI is grateful to all others who have directly or indirectly helped in developing this IMP.

# INTRODUCTION

## TRADE PRACTICAL

The trade practical manual is intended to be used in workshop . It consists of a series of practical exercises to be completed by the trainees during the one year course of the **Health Sanitary Inspector** Trade supplemented and supported by instructions/ informations to assist in performing the exercises. These exercises are designed to ensure that all the skills in compliance with NSQF LEVEL - 3 (Revised 2022).

The manual is divided into Ten modules.

Module 1	-	<b>Food and Nutrition</b>	50 Hrs
Module 2	-	<b>Water Pollution</b>	50 Hrs
Module 3	-	<b>Waste Management &amp; Air and Noise Pollution</b>	121 Hrs
Module 4	-	<b>Waste Water Mangement</b>	88 Hrs
Module 5	-	<b>Community Health - Occupational health</b>	78 Hrs
Module 6	-	<b>Biological Health Environment</b>	84 Hrs
Module 7	-	<b>Behavioral Science &amp; First Aid</b>	67 Hrs
Module 8	-	<b>Communicable &amp; Non-communicable diseases</b>	71 oHrs
Module 9	-	<b>Personal Hygiene</b>	20 Hrs
Module 10	-	<b>Demography</b>	52 Hrs

**Total**

**681 Hrs**

The skill training in the shop floor is planned through a series of practical exercises centred around one practical project. However, there are few instances where the individual exercise does not form a part of project.

While developing the practical manual a sincere effort was made to prepare each exercise which will be easy to understand and carry out even by below average trainee. However the development team accept that there is a scope for further improvement. NIMI, looks forward to the suggestions from the experienced training faculty for improving the manual.

## TRADE THEORY

The manual of trade theory consists of theoretical information for the one year course of the Health Sanitary Inspector Trade. The contents are sequenced according to the practical exercise contained in the manual on Trade practical. Attempt has been made to relate the theoretical aspects with the skill covered in each exercise to the extent possible. This co-relation is maintained to help the trainees to develop the perceptual capabilities for performing the skills.

The Trade theory has to be taught and learnt along with the corresponding exercise contained in the manual on trade practical. The indicating about the corresponding practical exercise are given in every sheet of this manual.

It will be preferable to teach/learn the trade theory connected to each exercise atleast one class before performing the related skills in the shop floor. The trade theory is to be treated as an integrated part of each exercise.

The material is not the purpose of self learning and should be considered as supplementary to class room instruction.

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## LEARNING / ASSESSABLE OUTCOME

On completion of this book you shall be able to

S.No.	Learning Outcome	Ref. Ex.No.
1	<p><b>Make a nutrition plan for all age groups under given conditions following safety precautions.</b></p> <p><b>Design a balanced diet as per the requirement under given conditions.</b></p> <p><b>Calculate and suggest the calorie and nutrition requirements as per the specific requirements of the person.</b></p> <p><b>Identify diseases that occur due to various deficiencies.</b></p> <p><b>Assess disease symptoms.</b></p> <p><b>Inspect and report various food adulterations.</b></p> <p><b>Suggest different food preservation techniques for various types of food.</b></p>	1.1.01 - 1.1.15
2	<p><b>Identify and understand water and its properties and causes of water pollution.</b></p> <p><b>Summarize water supply system with water treatment in the city/ country etc.</b></p> <p><b>Assemble plumbing system for Conservation of water.</b></p> <p><b>Develop rain water harvesting technique.</b></p> <p><b>Identify and understand the water purification process.</b></p>	1.2.16 - 1.2.35
3	<p><b>Handle the night soil of a city/ town with protection of environment and human being.</b></p>	1.3.36 - 1.3.42
4	<p><b>Plan solid waste management system in an area or a small town.</b></p>	1.3.43 - 1.3.52
5	<p><b>Practice Bio Medical and E- waste management system.</b></p>	1.3.53 - 1.3.57
6	<p><b>Identify air pollution sources and suggest the suitable remedies.</b></p> <p><b>Interpret the effects of global warming and identify the remedial measures.</b></p> <p><b>Suggest the measures to minimize the noise pollution.</b></p> <p><b>Plan and suggest the ventilation requirements of a particular area.</b></p>	1.3.58 - 1.3.65
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9	<p><b>Plan and suggest sanitary prescription of medical measures in housing and fairs &amp; festivals.</b></p>	1.5.78 - 1.5.81
10	<p><b>Identify occupational health hazards. Follow safety rules. Prevent occupational diseases.</b></p>	1.5.82 - 1.5.84

## LEARNING / ASSESSABLE OUTCOME

On completion of this book you shall be able to

S.No.	Learning Outcome	Ref. Ex.No.
11	Prepare and control of biological environment and different parts of spraying equipment.	1.6.85 - 1.6.90
12	Generate awareness programmes for masses on health education.	1.6.91 - 1.6.98
13	Illustrate importance of right behaviour and personal hygiene, learn its direct impact on their personal life & society.	1.7.99 - 1.7.102
14	Perform first-aid treatment to tackle medical emergency situation.	1.7.103 - 1.7.110
15	Assess intensity of any disease, recognize the disease and provide first-aid treatment on time to contain the disease. Follow the given immunization schedule and understand its importance. Identify disinfection and its importance to control diseases. Carry out sterilization.	1.8.111 - 1.8.115
16	Perform basic personal hygiene and interpret its impact on a person's health and personality.	1.9.116 - 1.9.120
17	Recognize various factors like death rate, birth rate, morbidity, MMR, IMR etc., analyze importance of census survey and data collection. Categorize health survey. Familiarize with vocabulary and terminology of different acts.	1.10.121 - 1.10.131

## SYLLABUS

Duration	Reference Learning Outcome	Professional Skills (Trade Practical) with Indicative hours	Professional Knowledge (Trade Theory)
<p>Professional Skill 50Hrs; Professional Knowledge 24 Hrs</p>	<p>Make a nutrition plan for all age groups under given conditions following safety precautions.</p> <p>Design a balanced diet as per the requirement under given conditions.</p> <p>Calculate and suggest the calorie and nutrition requirements as per the specific requirements of the person.</p> <p>Identify diseases that occur due to various deficiencies.</p> <p>Assess disease symptoms.</p> <p>Inspect and report various food adulterations.</p> <p>Suggest different food preservation techniques for various types of food.</p>	<ol style="list-style-type: none"> <li>1. Point out the requirement of nutrition. (03 hrs)</li> <li>2. Demonstrate on charts of various deficiency diseases. (04 hrs)</li> <li>3. Nutrient requirement of infant, wearing pregnancy, location, preschool child, school going child. (04 hrs)</li> <li>4. Survey of nutrition education &amp; its importance. (03 hrs)</li> <li>5. Preparation of diet menu for hypertensive, diabetic nephritis &amp; heart patients. (03 hrs)</li> <li>6. Images of patients suffering from diseases. (03 hrs)</li> <li>7. Audio-video aids. (04 hrs)</li> <li>8. Tabular differentiation of types of malnutrition. (03 hrs)</li> <li>9. Importance of health education to overcome the problem of malnutrition. (04 hrs)</li> <li>10. Display videos (Audio-video) on malnutrition. (04 hrs)</li> <li>11. Demonstration of sources of Hb by pictorial chart. (03 hrs)</li> <li>12. Demonstration of spoilage of some food items. (03 hrs)</li> <li>13. Application of common salt &amp; sugar to increase shelf life of many food items. (04 hrs)</li> <li>14. Cleanliness of Kitchen equipment and cooking utensils (04 hrs.)</li> <li>15. Operation and Usage procedures of storage Equipment like Refrigerators (04 hrs.)</li> </ol>	<p>Food (definition) &amp; function of food &amp; introduction of nutrition &amp; nutrients.</p> <p>Classification of food, their sources, nutrient diets proteins, fat, vitamins &amp; minerals – sources, function, deficiency excess &amp; daily requirement.</p> <p>Balanced diet- definition &amp; importance</p> <ul style="list-style-type: none"> <li>- Factors to be considered on planning meals.</li> <li>- Nutrient requirement of different age group</li> <li>- Diet survey</li> </ul> <p>Family assessment – clinical examination of all members – height &amp; weight BMI [Body mass index], Head circumference, - Blood test for Hb.</p> <p>Nutrition education malnutrition-causes prevention, low birth weight (LBW), causes of LBW, prevention of LBW, special care to be given to malnourished children.</p> <p>Therapeutic Diet: Introduction for balanced diet, weight reducing diet-low fat diet, bland diet, cirrhosis of liver, renal stone</p> <p>Food Preservation: definition &amp; methods, household &amp; industrial method of preservation, self-line, Pasteurization: methods, types &amp; importance.</p> <p>Refrigeration: Prevents spoilage.</p>
<p>Professional Skill 50 Hrs; Professional Knowledge 12 Hrs</p>	<p>Identify and understand water and its properties and causes of water pollution.</p> <p>Summarize water supply system with water treatment in the city/ country etc.</p>	<ol style="list-style-type: none"> <li>16. Draw a chart showing various environmental factors. (03 hrs)</li> <li>17. Tabulate various types of water with their properties. (03 hrs)</li> <li>18. Classify water resources (surface water and ground water). (06 hrs)</li> <li>19. Prepare a pie chart of total availability of water on the earth (Fresh water, saltwater, potable water etc.) (02 hrs)</li> </ol>	<p>WHO's definition for environmental sanitation.</p> <p>Safe and wholesome water.</p> <p>Sources of water. Various uses of water and its needs.</p> <p>Water borne diseases.</p> <p>Conservation sources of water.</p> <p>Quality of water.</p> <p>Physical, chemical and biological standard for portable water.</p>

	<p>Assemble plumbing system for Conservation of water.</p> <p>Develop rain water harvesting technique.</p> <p>Identify and understand the water purification</p>	<p>20. Tabulate the per capital water demand for domestic purpose. (02 hrs)</p> <p>21. Prepare a chart of water demand in different areas such as hospitals, hotels, industries, schools etc. (01 hrs)</p> <p>22. Prepare a chart for impact of polluted water on human health, animals, plants etc. (03 hrs)</p> <p>23. Tabulate the different methods for conservation of water in different areas. (03 hrs)</p> <p>24. Draw and sketch a picture of rainwater harvesting. (01 hrs)</p> <p>25. Identify the difference between portable water, safe and wholesome water. (03 hrs)</p> <p>26. Prepare a chart for physical, chemical and bacteriological quality of water. (02 hrs)</p> <p>27. Explain the disinfection with various disinfectant for well disinfection (02 hrs)</p> <p>28. Prepare the list of sources of water pollution with their different characteristics. (02 hrs)</p> <p>29. Visit to a water treatment plant. (02 hrs)</p> <p>30. Make a diagram of water treatment plant with different process of water purification. (04 hrs)</p> <p>31. Collection and dispatch of water sample for chemical and bacteriological examination. (02 hrs)</p> <p>32. Prepare and construct a purification system in the rural areas. (02 hrs)</p> <p>33. Calculate the chlorine demand and prepare the graph also for residual chlorine in water. (01 hrs)</p> <p>34. Collect the water sample from the domestic taps, surface and ground water resources. (02 hrs)</p> <p>35. Perform the practical for physical and chemical parameters of given water sample in testing labs</p> <ul style="list-style-type: none"> <li>- pH</li> <li>- Turbidity</li> <li>- Chlorine</li> <li>- Hardness</li> <li>- TDS</li> <li>- Acidity</li> <li>- Alkalinity etc. (05 hrs)</li> </ul>	<p>Public health aspect of very hard water.</p> <p>Steps of disinfection of well.</p> <p>Sources and nature of pollution of water.</p> <p>Purification of water:</p> <ul style="list-style-type: none"> <li>i) Large Scale</li> <li>ii) Small Scale</li> </ul> <p>Prepare of a sanitary well and tube well.</p> <p>Plumbing system and its maintenance.</p> <p>Water supply and storage system at the community and domestic.</p> <p>Pot method of Chlorination.</p> <p>Swimming pool.</p> <p>Water testing labs. (12 hrs.)</p>
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Professional Skill 40Hrs; Professional Knowledge 12Hrs	Handle the night soil of a city/town with protection of environment and human being.	36. Show the difference between water and sewage with given samples in the bottles in the testing labs. (02 hrs) 37. Categorises the numerous impacts of night soil on the water bodies, atmosphere, soil etc. (06 hrs) 38. Tabulate numerous impacts of food chain and impact of food contamination on human bodies. (02 hrs) 39. Prepare a chart for various diseases due to unsanitary disposal of night soil. (02 hrs) 40. Describe the construction and maintenance of service and non-service type latrines bore hole, dug well, RCA, septic tank, sulabh souchalaya. (13 hrs) 41. Visit to sulabh souchalaya. (17 hrs) 42. Demonstrating the construction and maintenance of trenching ground.(08hrs)	<b><u>Night soil disposal</u></b> Sewage in liquid waste containing human excreta. Numerous impacts of night soil on the environmental factors. Faucal borne disease due to unsanitary disposal of night soil. Different types of latrines in use principal of construction of sanitary latrines and their uses. i) Bore hole ii) Dug well iii)RCA iv) Septic tank latrines.(12 hrs.)
Professional Skill 46Hrs; Professional Knowledge 12Hrs	Plan solid waste management system in an area or a small town.	43. Identify resources of increasing solid waste. (02 hrs) 44. Tabulate the category of solid waste based on sources. (02 hrs) 45. Classify solid waste according to their different properties such as medical, municipal, commercial, construction. (02 hrs) 46. Demonstration of collection methods of solid waste. (02 hrs) 47. Prepare a plan chart of solid waste management in a city. (02 hrs) 48. Prepare pie chart composition of MSW. (02 hrs) 49. Explain the disposal methods of solid waste in sanitary methods. (12 hrs) 50. Illustrate the bad effects of solid waste disposal in a chart. (04 hrs) 51. Compare the different methods of collection and transportation of solid waste with diagrams. (02 hrs) 52. Visit disposal site.  i. Sanitary landfills ii. Composting iii. Incineration iv. Biogas plant (16 hrs)	<b><u>Solid waste disposal</u></b> - Source, generation, storage, collection and disposal methods of solid waste. - Classification of solid waste in community. - Polluting effects of different types of solid waste. - System of collection of solid waste from the houses & streets. - Sanitary transportation of solid waste. - Sanitary process of disposal of solid waste such as composting, sanitary land filling, incineration etc.
Professional Skill 80Hrs; Professional Knowledge 20Hrs	Practice Bio Medical and E-waste management system.	<b>Bio Medical Waste Management</b> 53. Techniques of segregation, packaging, storage, transport of infectious waste. (15 hrs.) 54. Techniques of Biomedical waste management. (12 hrs.)	<b>Bio Medical Waste Management</b> - Definition of Bio Medical Waste - Sources of Bio Medical Waste - Waste minimisation - BMW – segregation, collection, transportation, treatment and

		<p>55. Treatment method- Autoclave, Hydroclave, Microwave, Chemical Disinfection, Solidification and stabilization, Bioremediation, (20 hrs.)</p> <p>56. Accumulation and storage of hazardous waste, (12 hrs.)</p> <p>57. Land disposal of hazardous waste, (17 hrs.)</p>	<p>disposal (including color coding)</p> <ul style="list-style-type: none"> <li>- Liquid BMW, Radioactive waste, Metals/Chemicals/Drug waste</li> <li>- BMW management and method of disinfection</li> <li>- Modern technology for handling BMW</li> <li>- Use of personal protective equipment (PPE)</li> <li>- Monitoring and controlling of cross infection (protective devices)</li> <li>- Identifying the risk of Bio Medical Waste</li> <li>- E-waste: Introduction, toxicity due to hazardous substances in e-waste and their impacts, domestic e-waste disposal, e-waste management, technologies for recovery of resource from electronic waste, guidelines for environmentally sound management of e-waste, occupational and environmental health perspectives of recycling e-waste in India.</li> </ul>
<p>Professional Skill 35Hrs; Professional Knowledge 14 Hrs</p>	<p>Identify air pollution sources and suggest the suitable remedies.</p> <p>Interpret the effects of global warming and identify the remedial measures.</p> <p>Suggest the measures to minimize the noise pollution.</p> <p>Plan and suggest the ventilation requirements of a particular area.</p>	<p>58. Demonstration of humidity and temperature. (04 hrs)</p> <p>59. Point out sources of air pollution. (02 hrs)</p> <p>60. Prepare charts or posters of Global warming. (03 hrs)</p> <p>61. Prepare posture on prevention techniques for Air pollution. (03 hrs)</p> <p>62. Demonstration of an AC plant for thermal comfort. (03 hrs)</p> <p>63. Point out types of ventilation. (03 hrs)</p> <p>64. Measurement of noise level. (06 hrs)</p> <p>65. Process to control noise pollution (12 hrs.)</p>	<p><b>Air pollution</b></p> <ul style="list-style-type: none"> <li>- Introduction of air pollution.</li> <li>- Composition of air.</li> <li>- Sources and nature of air pollution.</li> <li>- Effect of air pollution on health.</li> <li>- Prevention and controlling methods for air pollution.</li> <li>- Explain global warming and its impact.</li> <li>- Concept of temperature, humidity, radiation, thermal comfort, evaporation etc.</li> <li>- Methods of air purification.</li> <li>- Air disinfection.</li> <li>- Definition of ventilation.</li> <li>- Concept and importance of adequate ventilation.</li> <li>- Types of ventilation</li> </ul> <p><b>Noise pollution</b></p> <ul style="list-style-type: none"> <li>- Introduction.</li> <li>- Sources.</li> <li>- Health Impacts.</li> <li>- Preventive measures for controlling Noise pollution. (06 hrs.)</li> </ul>



<p>Professional Skill 48Hrs</p> <p>Professional Knowledge 14Hrs</p>	<p>Illustrate concept of liquid waste and disposal. Know the types of sewer Health hazards due to liquid waste.</p> <p>Plan and help in construction and maintenance of sewers, traps, plumbing tools etc.</p>	<p>66. Point out the sewage treatment plant. (04 hrs)</p> <p>67. Inspection of flushing tank, manholes etc. (05hrs)</p> <p>68. Demonstration of various traps 'p' trap, 's' trap, 'q' trap etc. (10 hrs)</p> <p>69. Demonstration of manholes by video calls. (10 hrs)</p> <p>70. Demonstration of various plumbing tools like hacksaw, pipe cutter, pipe vice, pipe wrench set of spanners etc. (06 hrs)</p> <p>71. Inspection and maintenance of sewage treatment plant. (06 hrs)</p> <p>72. Identify various equipment of sewage disposal. (02hrs)</p> <p>73. Identify pollution of water from sewage. (02 hrs)</p>	<p><b>Liquid waste disposal</b></p> <ul style="list-style-type: none"> <li>- Definition of liquid waste and its sources.</li> <li>- Human waste management system.</li> <li>- Various methods for liquid waste disposal.</li> <li>- Pollution of water due to sewage.</li> <li>- Health hazard associated with liquid waste.</li> <li>- Sewers and its types.</li> <li>- Methods of laying sewers.</li> <li>- Construction and maintenance of sewers.</li> <li>- Sewer appurtenances.</li> <li>- Traps introductions.</li> <li>- Types of traps.</li> <li>- Definition of plumbing.</li> <li>- Plumbing tools and operations.</li> </ul> <p><b>Sewage disposal</b></p> <ul style="list-style-type: none"> <li>- Definition and types of sewage system.</li> <li>- Sewage farming and land treatment.</li> <li>- Sewage disposal by biogas plant.</li> <li>- Methods of disinfecting sewage.</li> <li>- Sewage farming.(12 hrs.)</li> </ul>
<p>Professional Skill 43Hrs;</p> <p>Professional Knowledge 12 Hrs</p>	<p>Suggest disposal methods for dead animals and humans.</p> <p>Identify different types of soil, its importance in relation to public health and reclamation of land.</p>	<p>74. Visit to burial ground, proper process of disposal of dead bodies and maintenance of records as per legal provisions.(17 hrs)</p> <p>75. Identify soil sample equipments. (09 hrs)</p> <p>76. Sampling for assessment of soil pollution. (09 hrs)</p> <p>77. Treatment of soil after the PH and disinfection. (08 hrs)</p>	<p><b>Burial and Cremation</b></p> <ul style="list-style-type: none"> <li>- Introduction</li> <li>- Disposal of dead.</li> <li>- Types of disposal methods.</li> <li>- Methods of preservation of dead.</li> <li>- Commonly and less commonly used methods for disposal of dead.</li> <li>- Basic requirements for burial and cremation grounds.</li> <li>- Health hazards associated with unsanitary disposal of dead bodies.</li> </ul> <p><b>Soil sanitation</b></p> <ul style="list-style-type: none"> <li>- Introduction and importance of soil.</li> <li>- Classification of soil.</li> <li>- Classification from the view point of importance in public health.</li> <li>- Reason of excessive moisture in the soil.</li> <li>- Reclamation of land.</li> <li>- Soil health.</li> </ul>

Professional Skill 43Hrs; Professional Knowledge 12Hrs	Plan and suggest s a n i t a r y prescription of m e d i c a l measures in housing and fairs & festivals.	78. Visit of housing for assessing sanitary standards and prescription of remedial measures. (15 hrs) 79. Classify the overcrowding. (04 hrs) 80. Inspection and preparation of fairs and festivals. (14 hrs) 81. Preparation of sanitary arrangements associated with natural calamities. (10 hrs)	<b>Housing</b> - General principle of healthy housing. - Home sanitation. - Utility services of house. - Sanitary standards for construction of house. - Food hygiene at home. - Specification for healthy housing. <b>Sanitation in fairs and festivals</b> - Sanitation management at fairs and festivals. - Sanitary problems associated with human gatherings and temporary settlements. - Alternative emergency sanitary provisions to prevent sanitation crisis for food, housing, water supply, lighting. - Disposal of community waste and prevention of outbreak of epidemics.(12 hrs.)
Professional Skill 35Hrs; Professional Knowledge 12Hrs	I d e n t i f y occupational health hazards. Follow safety rules. Prevent occupational diseases.	82. Visit various trade premises (diary, bakery etc.) (12 hrs) 83. Visit to a factory for survey of sanitation problems of workplace. (18 hrs) 84. Identification of danger zones and adequacy of safety arrangements.(12 hrs)	<b>Occupational health</b> - Introduction - Occupational environment measures. - Occupational diseases. - State the importance of safety and health at work place. - State the role of employer, trade union and employees for health and safety program. - Measures for health protection workers. - Prevention of occupational diseases. - Provision- benefit to employees. - Occupational health in India.(12 hrs.)
Professional Skill 60Hrs; Professional Knowledge 16Hrs	Prepare and control of b i o l o g i c a l environment and different parts of s p r a y i n g equipment.	85. Identification and use of insecticides, pesticides and disinfectants. (02 hrs) 86. Application of techniques of sterilisation and disinfection of various articles.(04 hrs) 87. Identification of different part of spraying equipment. (04 hrs) 88. Identify and use of larvicides. (04 hrs) 89. Operation and maintenance of spraying equipment. (06 hrs) 90. Identify and use of rodenticides. (04 hrs)	<b>Control of biological environment</b> - Introduction - Study on insecticides, pesticides and disinfections. - Sterilisation and disinfection of different articles. - Various spraying equipment. - Uses of rodenticides and larvaecidals. - Principal of arthropod control.(06 hrs.)

<p>Professional Skill 60Hrs; Professional Knowledge 16 Hrs</p>	<p>Generate awareness programmes for masses on health education.</p>	<p>91. Designing of posters on Malaria. (10 hrs) 92. Designing of posters on roles and responsibilities of a health inspector. (10 hrs) 93. Demonstration of health awareness program as a class activity. (06 hrs) 94. Designing environmental sanitation posters. (08 hrs) 95. Designing posters on balanced diet. (06 hrs) 96. Designing poster on basic hygiene practices. (04 hrs) 97. Preparing power point presentation on health awareness. (10 hrs) 98. Demonstration of preparation of ORS. (06 hrs)</p>	<ul style="list-style-type: none"> <li>- Definition of health</li> <li>- Content of health education.</li> <li>- Principal of health education.</li> <li>- Health education opportunities for health inspector in his work place.</li> <li>- Use of audio-visual aids and media.</li> <li>- Health education approach.</li> <li>- Planning health education activities, education in relation to environmental sanitation.</li> <li>- Awareness on need of sanitation amenities.</li> <li>- Health education material.</li> <li>- Contribution of public health centres in health education.</li> <li>- Utilising community resources for health education.</li> <li>- Benefits of personal contract group meetings to provide health education.(18 hrs.)</li> </ul>
<p>Professional Skill 51Hrs; Professional Knowledge 16 Hrs</p>	<p>Illustrate importance of right behaviour and personal hygiene, learn its direct impact on their personal life &amp; society.</p>	<p>99. Preparing charts on personal hygiene habits. (22 hrs) 100. Designing posters on Do's and Don'ts in a social behaviour. (11 hrs) 101. Demonstration of hand washing and caring. (09 hrs) 102. Demonstration on oral hygiene. (09 hrs)</p>	<p><b>Behavioral Science</b></p> <ul style="list-style-type: none"> <li>- Definition of behavioural science.</li> <li>- Importance of behavioural science.</li> <li>- Impact of behaviour on personal hygiene.</li> <li>- Basic hygiene practices.</li> <li>- Habits and customs affecting personal hygiene.</li> <li>- Caring sense organs.</li> <li>- Oral hygiene.</li> <li>- Factors influencing human behaviour, change of behavioural pattern in different age groups.</li> <li>- Interpersonal relations and defence mechanism. (18 hrs.)</li> </ul>
<p>Professional Skill 95Hrs; Professional Knowledge</p>	<p>Perform first-aid treatment to tackle medical emergency situation.</p>	<p>103. Dressing of wounds, bandages. (08 hrs) 104. Management of bone injuries with splints, slings. (10 hrs) 105. Transportation of injured and unconscious cases and their management. (09 hrs) 106. Diagnosis and treatment of minor ailments, cough, fever, bleeding, toothache etc. (15 hrs) 107. Poisoning case managements (08 hrs) 108. Management in case of heat attack, sun stroke, haemorrhage, burns, electrical injuries etc. (20 hrs) 109. Training on artificial respiration. (10 hrs) 110. Arranging first-aid treatment in various emergency cases. (15 hrs)</p>	<p><b>First-Aid</b></p> <ul style="list-style-type: none"> <li>- Aim of first-aid.</li> <li>- Principles and practice of first-aid.</li> <li>- Contents of a basic first-aid box.</li> <li>- CPR</li> <li>- Types of dressing and bandages.</li> <li>- Types of wounds.</li> <li>- Miscellaneous conditions.</li> <li>- Approach to a casualty.</li> <li>- Psychological first-aid.</li> <li>- Handling multiple casualties.</li> <li>- Types of injuries like road accidents, factories accidents and disaster injuries.</li> <li>- Transportation of victims and proper care provided.(36 hrs.)</li> </ul>

<p>Professional Skill 71 Hrs;  Professional Knowledge 20 Hrs</p>	<p>Assess intensity of any disease, recognize the disease and provide first-aid treatment on time to contain the disease.</p> <p>Follow the given immunization schedule and understand its importance.</p>	<p>111. Demonstration on communicable and non-communicable diseases symptoms and their control measures. (20 hrs)</p> <p>112. Preparation of immunisation programme (15 hrs)</p> <p>113. Conducting health and general survey and report making. (20 hrs)</p> <p>114. Videos on disinfection and sterilisation techniques. (08 hrs)</p> <p>115. Various chemicals uses with safety for disinfection through videos. (08 hrs)</p>	<p><b>Communicable diseases</b></p> <ul style="list-style-type: none"> <li>- Definition and introduction on communicable disease.</li> <li>- Air-borne and transmission of diseases through contact.</li> <li>- Symptoms of diseases.</li> <li>- Explain in detail various communicable diseases like Swine Flu, T.B., AIDS, Diphtheria, Polio, measles, diarrhoea etc.</li> <li>- General measures for prevention and control of communicable diseases.</li> </ul> <p><b>Non- communicable diseases</b></p> <ul style="list-style-type: none"> <li>- Introduction of non-communicable disease.</li> <li>- Explain in detail diseases like cancer, hypertension, cardiac disease, diabetes etc.</li> <li>- In detail symptoms, prevention and control of non-communicable diseases.</li> </ul> <p><b>Immunity and immunisation</b></p> <ul style="list-style-type: none"> <li>- Importance of immunity and immunisation</li> <li>- Types, purpose and effect of immunisation.</li> <li>- National immunisation schedule.</li> <li>- Measles, typhoid vaccines and pentavalent vaccine.</li> </ul> <p><b>Disinfection and sterilisation</b></p> <ul style="list-style-type: none"> <li>- Need of disinfection and sterilisation.</li> <li>- Importance of disinfection and sterilisation in hospitals.</li> <li>- Introduction and uses of various disinfection agents like Halogen, KMnO<sub>2</sub> solution, solid and liquid agents.</li> <li>- Effective disinfectants like formaldehyde, sulphur, chlorine gases etc.</li> <li>- Use of UV radiation and ozone as disinfectant.(30 hrs.)</li> </ul>
<p>Professional Skill 20 Hrs;  Professional Knowledge 10 Hrs</p>	<p>Perform basic personal hygiene and interpret its impact on a person's health and personality.</p>	<p>116. Making posters on dental care. (06 hrs)</p> <p>117. Making posters on skin and hair hygiene. (04 hrs)</p> <p>118. Making posters on basic hygiene habits. (03 hrs)</p> <p>119. Demonstration on right method for hand washing. (03 hrs)</p> <p>120. Demonstration on oral health. (04 hrs)</p>	<p><b>Personal hygiene</b></p> <ul style="list-style-type: none"> <li>- Need and importance of personal hygiene in daily life.</li> <li>- Factors influencing health and hygiene habits.</li> <li>- Maintaining basic hygiene habits of skin, hair, oral, nails etc.</li> <li>- Developing dental care, care of hands, washing etc.</li> <li>- Importance of regular exercise and nutritious food.</li> </ul>

<p>Professional Skill 52Hrs; Professional Knowledge 12 Hrs</p>	<p>Recognize various factors like death rate, birth rate, morbidity, MMR, IMR etc., analyze importance of census survey and data collection.</p> <p>Categorize health survey.</p> <p>Familiarize with vocabulary and terminology of different acts.</p>	<p>121. Data collection from hospitals for Malaria cases. (05 hrs)</p> <p>122. Data collection from hospitals for Dengue cases. (05 hrs)</p> <p>123. Health survey of people of a locality. (05 hrs)</p> <p>124. Vaccination survey in a locality. (05 hrs)</p> <p>125. Design and prepare population control measures on chart.(05 hrs)</p> <p>126. Collection and dispatch of food samples for analysis preparation of papers for legal proceeding. (06 hrs)</p> <p>127. Performance of simple household tests to identify adulteration in milk, ghee, oil, sugar, tea etc. (07 hrs)</p> <p>128. Acquaintance with registration of acts. (06 hrs)</p> <p>129. Prepare reporting of different acts. (06 hrs)</p> <p>130. Documentation process for implementation of different acts. (05 hrs)</p> <p>131. Prepare a chart of pollution levels of toxins of different industries in an area. (05 hrs)</p>	<p><b><u>Demography and health survey</u></b></p> <ul style="list-style-type: none"> <li>- Definition and introduction of demography.</li> <li>- Factors of demography.</li> <li>- Various stage of demo.             <ol style="list-style-type: none"> <li>1. High stationary</li> <li>2. Early expending</li> <li>3. Late expending</li> <li>4. Low stationary</li> </ol> </li> <li>- Health survey includes birth rate, death rate, morbidity, IMR, MMR etc.</li> <li>- Population control measures.</li> </ul> <p><b><u>Public Health Act</u></b></p> <ul style="list-style-type: none"> <li>- Definition, introduction and importance of acts.</li> <li>- Indian Epidemic Disease Act.</li> <li>- Explain endemic, pandemic with examples.</li> <li>- Define epidemiology.</li> <li>- Air and Water Pollution Control Act.</li> <li>- Prevention of Food Adulteration Act.</li> <li>- Birth and Death Registration Act.</li> <li>- M.T.P. Act.</li> <li>- Suppression of Immoral Traffic Act (SITA).</li> <li>- Municipal and Local Body Acts related to Housing Sanitation Act.</li> <li>- Factory Act and ESI Acts. (12 hrs.)</li> </ul>



**Point out the requirement of nutrition**

**Objectives:** At the end of this exercise you shall be able to

- observe the exact requirements of nutrition for our body
- infer and interpret the requirements of nutrition for different age groups.

<b>Requirements</b>			
<b>Materials</b>			
• Computer with internet	- 1 No.	• A4 sheet	- as reqd.
• Pencil & pen	- as reqd.	• LCD projector	- 1 No.

**Note:** Trainer will teach trainee regarding the daily nutritional requirements for our body and the details about macro and micro-nutrients.

**PROCEDURE**

**TASK 1: Amount of nutrient quantity required for human body per day**

- 1 See the Table 1 and write the quantity of nutrient required per day for a normal human body.
- 2 Get it checked with the trainer

**Table 1**

S.No	Nutrient	Quantity per day in grams
1	Energy	
2	Protein	
3	Fat	
4	Carbohydrates	
5	Sugar	

**TASK 2: Daily Calorie required for different age groups**

- 1 Fill the details of calorie required per day in the Table 2 against the each age group
- 2 Get it checked with the trainer

**Table 2**

S.No	Age	Calorie required per day		
		Sedentary	Moderately Active	Active
1	4-6 years			
2	9-13 years			
3	14-18 years			
4	31-50 years			
5	51 and above			

**TASK 3: Daily nutritional requirements for children**

- 1 Fill the details of protein, fat, calcium, iron requirement in the table -3 against the each age group children
- 2 Get it checked with the trainer

**Table 3**

S.No	Age	Calorie required per day			
		Protein(g)	Fat (g)	Calcium (mg)	Iron (mg)
1	2-3 years				
2	4-6 years				

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**Demonstrate on charts of various deficiency diseases**

**Objectives:** At the end of this exercise you shall be able to

- identify the cause for the disease and write down the symptoms
- identify the symptoms of the mineral deficiency.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- 1 No.	• Chart paper	- 1 No.
• Pencil & pen	- as reqd.	• LCD Projector	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach trainee regarding the various deficiency of diseases with the help of PPT and charts.

**PROCEDURE**

**TASK 1: Identification of the Cause for the Disease and write down the symptoms**

- 1 Write the disease and the related symptoms against the deficiency of each vitamins in the Table 1.
2. Get it checked with the trainer

**Table 1**

SI.No	Deficiency	Disease	Symptoms
1	Vitamin A		
2	Vitamin D		
3	Vitamin B12		
4	Vitamin B1		
5	Vitamin C		

**TASK 2: Identification of the symptoms of the mineral deficiency**

- 1 Write the related symptom against the deficiency of each mineral in the table-2
- 2 Get it checked with the trainer

**Table 2**

SI.No	Deficiency	Symptoms
1	Calcium	
2	Potassium	
3	Iron	
4	Fluorine	
5	Phosphorus	

**Nutrient requirement of infant, wearing pregnancy, location, preschool child, school going child**

**Objectives:** At the end of this exercise you shall be able to

- identify the nutrient required for infant, wearing pregnancy, location, preschool child, school going child and
- infer and interpret the requirements of nutrition for the same.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- 1 No.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.

**Note:** Trainer will teach trainee regarding the nutritional requirements of infant, wearing pregnancy, location, preschool child, school going child with the help of PPTs and charts.

**PROCEDURE**

**TASK 1: Identification of the daily nutritional requirements for infants**

- 1 Write the daily nutritional requirements for infants in the below Table 1.
- 2 Get it checked with the trainer.

**Table 1**

<b>S.No</b>	<b>Nutritional content</b>	<b>Daily requirement level</b>
1	Fluid	
2	Calories	
3	Protein	
4	Sodium	
5	Potassium	

**TASK 2: Identification of daily nutritional requirements for pregnant women**

- 1 Write the daily nutritional requirements for pregnant women in the below Table 2.
- 2 Get it checked with the trainer.

**Table 2**

<b>S.No</b>	<b>Nutritional content</b>	<b>Daily requirements in mg</b>
1	Calcium	
2	Iron	
3	Protein	
4	Folate	

**TASK 3: Identification of daily nutritional requirements for school going child**

- 1 Write the daily nutritional requirements for school going child in the below Table 3.
- 2 Get it checked with the trainer.

**Table 3**

S.No	Age	Calorie required per day	
		Male	Female
1	2-3 years		
2	4-8 years		
3	9-13 years		
4	14-18 years		

**TASK 4: Identification of average nutritional requirements at different regions**

- 1 Write the average nutritional requirements at different regions in terms of % below Table 4.
- 2 Get it checked with the trainer.

**Table 4**

S.No	Nutritional Content	Average nutritional requirement in terms of %
1	Northern region	
2	Southern region	
3	Western region	
4	Eastern region	

**Survey of nutrition education and its importance**

**Objectives:** At the end of this exercise you shall be able to

- observe the importance of nutrition education
- Report and substantiate the data using a public survey analysis.

**Requirements**

**Tools/Instruments**

- Computer with internet - 1 No.
- LCD Projector - 1 No.
- Pencil & pen - as reqd.
- A4 sheet - as reqd.

**Note:** Trainer will show trainee regarding the importance of nutrition education and substantiate the data using a survey and prepare the report.

**PROCEDURE**

**TASK 1: : Take up a survey as many as required based on the questionnaire below and submit a report & verify the report with the trainer**

- 1 How many meals do you eat each day?
  - a 3 or more
  - b 2 or less
- 2 How many times do you have vegetables?
  - a atleast 4 times a week;
  - b less than 4 times a week
- 3 How often do you eat fruit or drink a glass of juice?
  - a atleast 3 times a week;
  - b less than 3 times a week
- 4 How many glasses of milk do you drink each day?
  - a one glass or more;
  - b less than 1 glass
- 5 Do you eat vitamin-mineral supplement every day?
  - a Yes
  - b No
- 6 How often do you eat sea foods?
  - a atleast 2 times;
  - b less than 2 times
- 7 Are you aware of any health issues or diseases that are related to nutrition?
  - a Yes ,
  - b No ,
  - c Not sure
- 8 Approximately how much fluid per day has been taken?
  - a 2 litres or more;
  - b less than 2 litres
- 9 How many times a week do you eat nuts and dried fruits?
  - a Never,
  - b once ,
  - c twice,
  - d three times &
  - e more than 3 times
- 10 How often you take non-vegeterian in a week?
  - a Once;
  - b Never;
  - c More than once

**Preparation of diet menu for hypertensive, diabetic nephritis and heart patients**

**Objectives:** At the end of this exercise you shall be able to

- observe the diet menu for hypertensive, diabetic nephritis and heart patients
- prepare and suggest a balanced diet chart for all the above patients.

**Requirements**

**Tools/Instruments**

- Computer with internet - 1 No.
- Pencil & pen - as reqd.
- A4 sheet - as reqd.
- Chart paper - 1 No.

**Note:** Trainer will show trainee the diet menu for hypertensive, diabetic nephritis and heart patients and ask them to prepare and suggest a balanced diet for all the patients.

**PROCEDURE**

**TASK 1: Preparation of balanced diet chart for diabetic nephritis**

- 1 Prepare a balanced diet chart for diabetic patient in the Table 1 given below.
- 2 Get it checked with the trainer.

**Table 1**

Day	Breakfast	Lunch	Dinner	Snack
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				

**TASK 2: Preparation of balanced diet chart for hypertensive patients**

- 1 Prepare a balanced diet chart for hypertensive patients in the Table 2 given below.
- 2 Get it checked with the trainer.

**Table 2**

Day	Breakfast	Lunch	Dinner	Snack
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				

**TASK 3: Preparation of balanced diet chart for heart patients**

- 1 Prepare a balanced diet chart for heart patients in the Table 3 given below.
- 2 Get it checked with the trainer.

**Table 3**

<b>Day</b>	<b>Breakfast</b>	<b>Lunch</b>	<b>Dinner</b>	<b>Snack</b>
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				

-----

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**Images of patients suffering from diseases**

**Objectives:** At the end of this exercise you shall be able to

- identify the type of different diseases caused due to nutrition deficiency
- reason out the nutrition deficiency causing the particular disease.

**Requirements**

**Tools/Instruments**

- Computer with internet - 1 No.
- Pencil & pen - as reqd.
- A4 sheet - as reqd.


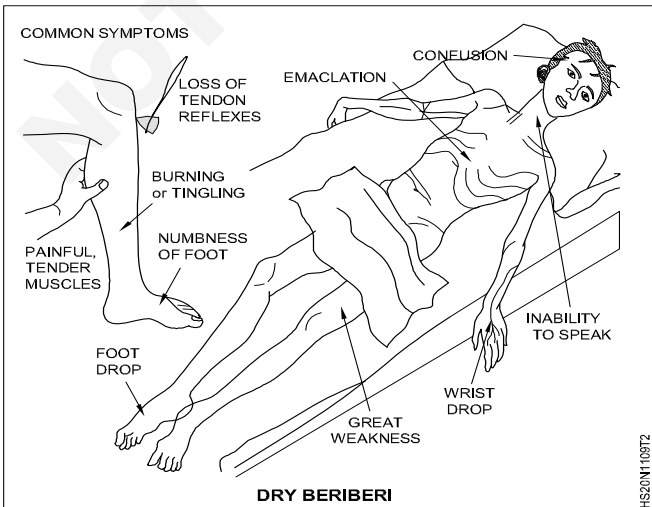
**Note:** Trainer will teach trainee regarding the various types diseases caused due to nutritional deficiency with the help of PPT and charts.


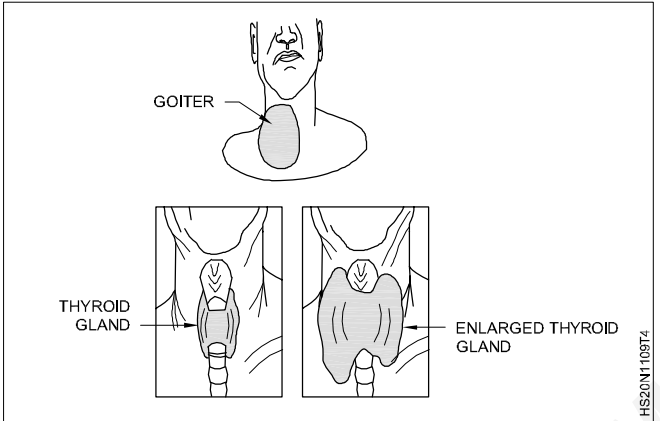
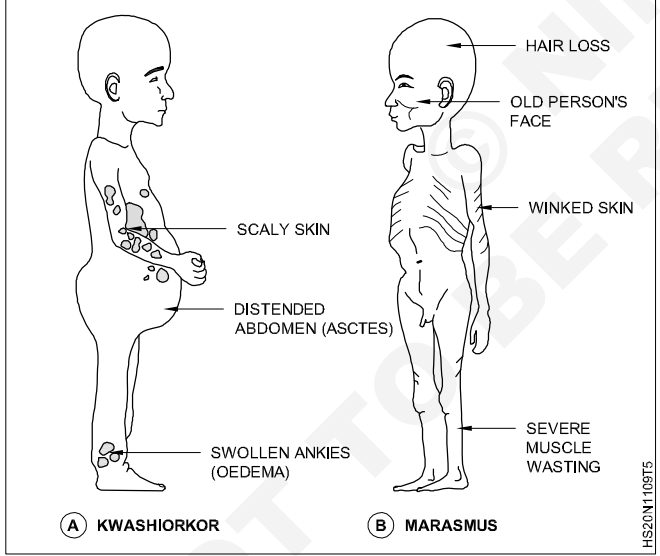
**PROCEDURE**

**TASK 1: Identification of the type of disease and reason out the cause for the disease**

- 1 Write the type of disease and also the cause for the nutritional deficiency responsible for the particular disease from the given images represented in Table 1.
- 2 Get it checked with the trainer.

**Table 1**

Sl. No.	Images	Name or Type disease	Nutritional deficiency causing the disease
1			
2			

Sl. No.	Images	Name or Type disease	Nutritional deficiency causing the disease
3			
4			
5			



Sl. No.	Images	Name or Type disease	Nutritional deficiency causing the disease
6	<p style="text-align: center;"><b>SYMPTOMS OF ANEMIA</b></p> <p style="text-align: right; font-size: small;">HS20N1109T6</p>		
7	<p style="text-align: center;"><b>SIGNS OF RICKETS</b></p> <p style="text-align: right; font-size: small;">HS20N1109T7</p>		
8	<p style="text-align: center;"><b>SCURVY</b></p> <p style="text-align: right; font-size: small;">HSN1109T8</p>		

**Audio-video aids**

- Objectives:** At the end of this exercise you shall be able to
- observe the audio and video aids for various nutritional diseases
  - Demonstrate the same.

**Requirements**

**Tools/Instruments**

- |                          |            |
|--------------------------|------------|
| • Computer with internet | - 1 No.    |
| • Pencil & pen           | - as reqd. |
| • A4 sheet               | - as reqd. |
| • LCD Projector          | - 1 No.    |

**Note:** Trainer will show trainee regarding the various nutritional diseases through audio and video aids supporting the same and ask the trainee to demonstrate the same.

- Link1: <https://youtu.be/0bg7pxtYn20>
- Link 2: <https://youtu.be/TY8PptiRaWQ>

**Tabular differentiation of types of malnutrition**

**Objectives:** At the end of this exercise you shall be able to

- identify the different types of malnutrition
- tabulate the difference between various types of malnutrition.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- 1 No.	• A4 sheet	- as reqd.
• Pencil & pen	- as reqd.		

**Note:** Trainer will teach trainee regarding the different types of mal-nutrition with the help of PPT and charts.

**PROCEDURE**

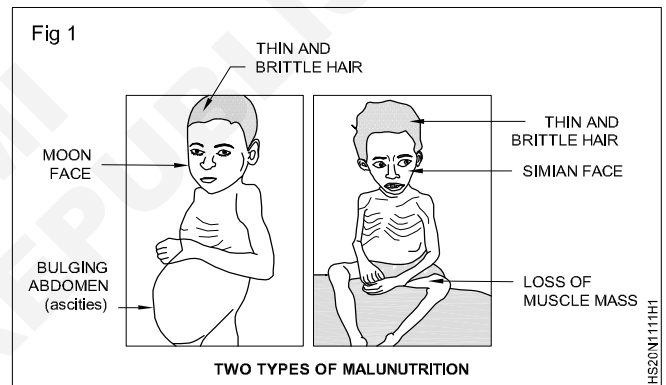
**TASK 1: Identify the type of malnutrition from the given images**

1 Write down the type of malnutrition by identifying the images shown below.

2 Get it checked with the trainer.

Type of malnutrition: .....

Type of malnutrition: .....



**TASK 2: Tabulating the features of different types of malnutrition**

1 Write the features of different types of malnutrition represented in Table 1.

2 Get it checked with the trainer.

**Table 1**

S.No	Feature	Marasmus	Kwashiorkor
1	Deficiency		
2	Appearance		
3	Edema		
4	Growth		
5	Activity		
6	Appetite		
7	Muscle wasting		
8	Mental changes		
9	Liver enlargement		
10	Hair changes		
11	Anemia		
12	Mortality		
13	Recovery		
14	Infections		
15	Face		

**Importance of health education to overcome the problem of malnutrition**

**Objectives:** At the end of this exercise you shall be able to

- assess the importance of health education and
- suggest measures to overcome the problem of malnutrition.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- 1 No.	• Inch tape	- 1 No.
• Weighing machine	- 1 No.	• Pencil & pen	- as reqd.
• Needles and syringes	- as reqd.	• Hb meter	- 1 No.
• Disposable masks	- as reqd.	• A4 sheet	- as reqd.
• Gloves	- as reqd.		

**Note: Trainer will teach trainee regarding the importance of health education through PPT and charts and ask the trainee to prepare a report.**

**PROCEDURE**

**TASK 1: Assess the importance of health education**

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1 Take up a survey as many as required based on the assessment criteria stated below and suggest appropriate diet to overcome malnutrition in the form of a report,</li> <li>2 Get it checked with the trainer.</li> </ol> | <ol style="list-style-type: none"> <li>4 Ask about symptoms of possible deficiency</li> <li>5 Measure BMI and examine for signs of possible deficiency</li> <li>6 Decide upon appropriate tests of nutritional state</li> </ol> |
|---|---|

**Nutritional Assessment**

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1 Ask about diet - type of diet and consumption of major food groups</li> <li>2 Ask about the use of supplements</li> <li>3 Assess risk factors:<br/>                     Medical - unintentional weight loss, feeding difficulties<br/>                     Non-medical -socio-economic</li> </ol> | <ol style="list-style-type: none"> <li>7 Interpret data from: history, examination and investigation carefully</li> <li>8 Treat the deficiency (diet and nutritional support) and underlying causative factors</li> <li>9 Monitor response to treatment</li> </ol> |
|--|--|

**Note: BMI = (weight (kg)/Height (M)/2**

**TASK 2: Suggestion of rich sources of food to overcome malnutrition**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1 Write down the rich sources of food containing with respect to the type of nutrient given in the Table 1.</li> </ol> | <ol style="list-style-type: none"> <li>2 Get it checked with the trainer.</li> </ol> |
|---|--|

**Table 1**

<b>S.No</b>	<b>Nutrient type</b>	<b>Sources of food</b>
1	Iron	
2	Calcium	
3	Vitamins	
4	Proteins	
5	Fats	

**Display videos (Audio-video) on malnutrition**

**Objectives:** At the end of this exercise you shall be able to

- observe the different types of nutrients and the presence of nutrients
- provide the requirement of nutrition.

**Requirements**

**Tools/Instruments**

- |                          |            |
|--------------------------|------------|
| • Computer with internet | - 1 No.    |
| • Pencil & pen           | - as reqd. |
| • A4 sheet               | - as reqd. |
| • LCD Projector          | - 1 No.    |

**Note:** Trainer will show trainee regarding the videos showing the malnutrition and ask them to demonstrate the same.

- Link 1: <https://youtu.be/uYJs5tuHSGk>
- Link 2: <https://youtu.be/bqElcMMmj5M>

**Demonstration of sources of H<sub>b</sub> by pictorial chart**

**Objectives:** At the end of this exercise you shall be able to

- observe the sources of H<sub>b</sub> using pictorial chart
- demonstrate the same.

Requirements			
<b>Tools/Instruments</b>			
• Computer with internet	- 1 No.	• Chart paper	- 1 No.
• Pencil & pen	- as reqd.	• LCD Projector	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach trainee regarding the sources of H<sub>b</sub> through PPT and pictorial charts.

**PROCEDURE**

**TASK 1: Observe the pictorial chart and assess the H<sub>b</sub> level present in the foods**

- 1 Write down the H<sub>b</sub> level present in the food items represented in the pictorial chart Fig 1&2 given below
- 2 Get it checked with the trainer.



**Demonstration of spoilage of some food items**

- Objectives:** At the end of this exercise you shall be able to
- identify the type of spoilage of different food items and
  - reason out the cause for the spoilage of food items.

**Requirements**

**Tools/Instruments**

- Computer with internet - 1 No.
- Pencil & pen - as reqd.
- A4 sheet - as reqd.
- LCD Projector - 1 No.




**Note:** Trainer will teach trainee regarding the different spoilage of some food items and reason out the cause for the spoilage of food items.

**PROCEDURE**

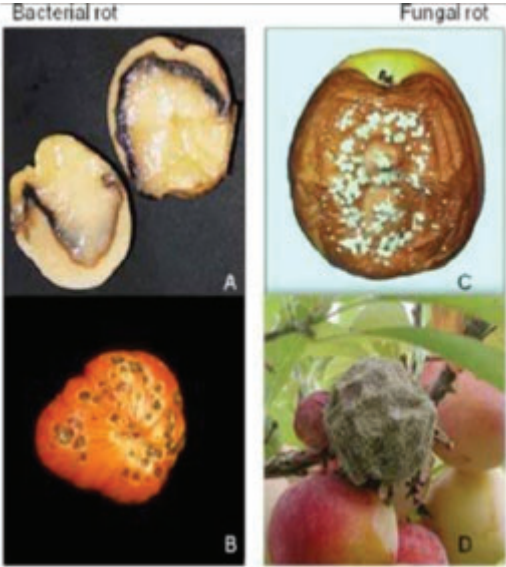
**TASK 1: Identification of the type of spoilage of different food items**

- 1 Trainee see and observe the type of spoilage of different food items and reason out the cause for the spoilage of food items
- 2 Categorize the food items accordingly and write it in the Table 1
- 3 Get it checked with trainer

**Table 1**

Sl. No.	Food item	Type of Spoilage	Cause for the food Spoilage
1			
2			
3			



Sl. No.	Food item	Type of Spoilage	Cause for the food Spoilage
4	 <p>The image contains four panels labeled A, B, C, and D. Panels A and B are under the heading 'Bacterial rot'. Panel A shows a cross-section of a fruit with a dark, sunken area. Panel B shows a whole fruit with several dark spots. Panels C and D are under the heading 'Fungal rot'. Panel C shows a whole apple covered in white mold. Panel D shows a close-up of a moldy apple stem.</p>		

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**Application of common salt and sugar to increase shelf life of many food items**

**Objectives:** At the end of this exercise you shall be able to

- observe the use of common salt and sugar in food preservation
- identify the method of food preservative technique.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- 1 No.	• Salt and sugar	- as suggested
• Pencil & pen	- as reqd.		
• A4 sheet	- as reqd.		



**Note:** Trainer will teach trainee regarding the use of common salt and sugar using PPT and pictorial charts.

**PROCEDURE**

**TASK 1: Identification of food preservation technique using common salt and sugar**

- 1 Trainee see the images given below and observe the method of food preservation technique represented under Table 1.
2. Get it checked with trainer

**Table 1**

<b>S.No</b>	<b>Food type</b>	<b>Preservation type</b>	<b>Principle of food preservation</b>	<b>Advantages</b>	<b>Disadvantages</b>
1					
2					

**Cleanliness of kitchen equipment and cooking utensils**

**Objectives:** At the end of this exercise you shall be able to

- identify the various kitchen equipment and cooking utensils
- interpret the cleanliness steps of the kitchen equipment's and cooking utensils.

**Requirements**

**Tools/Instruments**

- Computer with internet - as reqd.
- Pencil & pen - as reqd.
- A4 sheet - as reqd.

**Note:** Trainer will show trainee regarding the various kitchen equipment and cooking utensils using PPT and pictorial charts and ask the trainee to interpret the cleanliness level of the items.

**PROCEDURE**

**TASK 1: Identification of kitchen equipment and write the cleanliness procedure**

- 1 Write down the steps to clean and sanitize the given kitchen equipment's provided under Table 1.
- 2 Get it checked with trainer.

**Table 1**

<b>Sl.No</b>	<b>Kitchen equipment</b>	<b>Methods to clean and sanitize</b>
1	Cutting board	
2	Baking tools	
3	Glassware	
4	Utensils	
5	Kinves	
6	Counter top	
7	Grease traps	
8	Kitchen walls	
9	Kitchen floors	
10	Chimney	

**Operation and usage of storage equipment like refrigerators**

- Objectives:** At the end of this exercise you shall be able to
- observe the usage of storage equipment in refrigerator
  - interpret the shelf life of the food items stored in refrigerators.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• Refrigerator	- 1 No.

**Note:** Trainer will teach trainee regarding the usage of storage equipment like refrigerator using PPT and charts and ask the trainee to interpret the shelf life of the food items.

**PROCEDURE**

**TASK 1: Interpretation of shelf life of the food items stored in refrigerators**

- 1 Write down the shelf life of the food items stored in refrigerator, storage tips and spoilage signs for the given food products under Table 1.
- 2 Get it checked with the trainer

**Table 1**

<b>SI.No</b>	<b>Food Products</b>	<b>Shelf life</b>	<b>Storage tips</b>	<b>Spoilage signs</b>
1	Milk			
2	Cream			
3	Butter			
4	Eggs			
5	Chicken			
6	Cooked fish			
7	Apple			
8	Ice-cream			
9	Vegetables			
10	Pizza			
11	Soup and stews			
12	Left overs			

**Draw a chart showing various environmental factors**

**Objectives:** At the end of this exercise you shall be able to

- Illustrate a chart affecting various environmental factors and demonstrate the same.

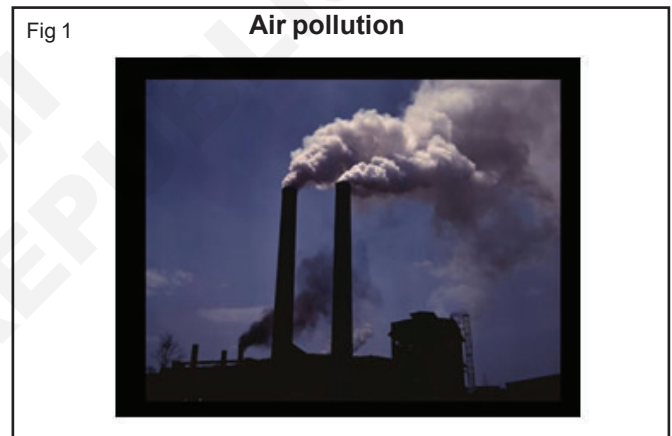
<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• Chartpaper	- as reqd.
• Pencil & pen	- as reqd.	• LCD projector	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach trainee regarding the various environmental factors using PPT and pictorial diagrams and ask the trainee to demonstrate the same.

**PROCEDURE**

**TASK 1: Observe the various environmental factors and illustrate a chart**

- 1 Draw a chart showing common causes of environment damage for the given images and suggest measures to overcome the same.
- 2 Get it checked with the trainer.

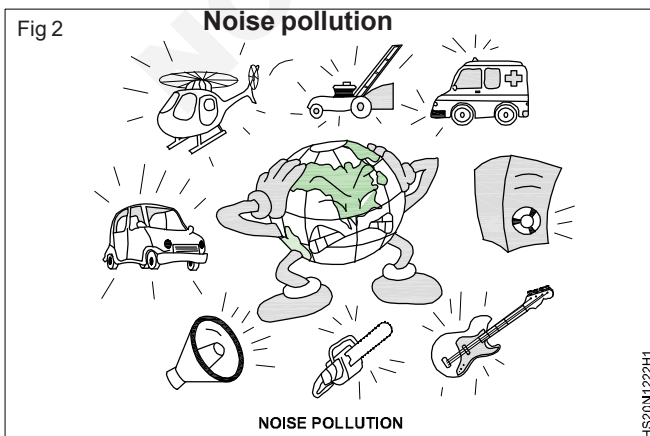


Common causes of environmental damage

- a).....
- b).....
- c).....

- How can you help out?

- .....
- .....
- .....



Common causes of environmental damage

- How can you help out?

a).....

- .....

b).....

- .....

c).....

- .....



Common causes of environmental damage

- How can you help out?

a).....

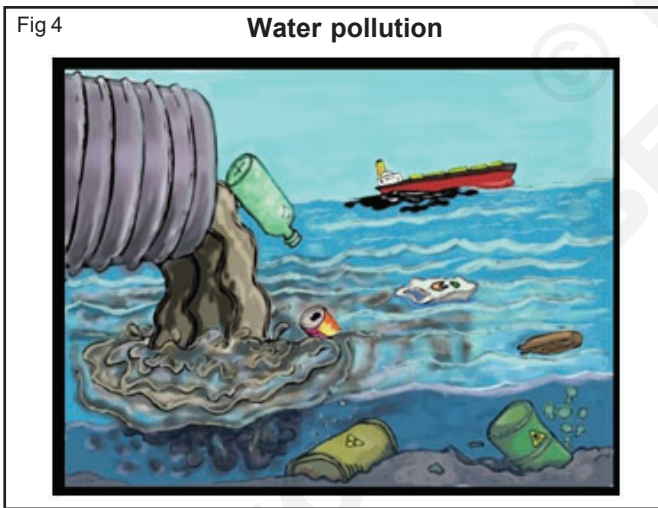
- .....

b).....

- .....

c).....

- .....



Common causes of environmental damage

- How can you help out?

a).....

- .....

b).....

- .....

c).....

- .....

**Tabulate various types of water with their properties**

**Objectives:** At the end of this exercise you shall be able to

- identify and categorize various types of water with their properties.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.

**Note:** Trainer will teach trainee regarding the various types of water and its properties using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Identification of water types and list their properties**

- 1 Identify the various types of water used and write down its properties in the given Table 1.
- 2 Get it checked with the trainer.

**Table 1**

Sl.No	Types of water	Physical Properties	Chemical Properties	Biological Properties
1	Ground water			
2	Waste water			
3	Surface water			
4	Potable water			
5	Distilled water			

**Note:**

**a Physical properties include parameters like surface tension, cohesion, density and adhesion, etc.....**

**b Chemical properties include parameters like Color, Turbidity, pH, TDS, TSS, BoD, COD, Water hardness, Molecular bonding, etc.....**

**c Biological properties include the water reaction with respect to attack of micro-organisms like virus, bacteria, fungi, algae etc.....**

**Classify water resources (surface water and ground water)**

**Objectives:** At the end of this exercise you shall be able to  
 • **classify water resources and differentiate them.**

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.



**Note:** Trainer will teach trainee regarding the classification of water resources using PPT and suitable visual demonstrations.

**PROCEDURE**


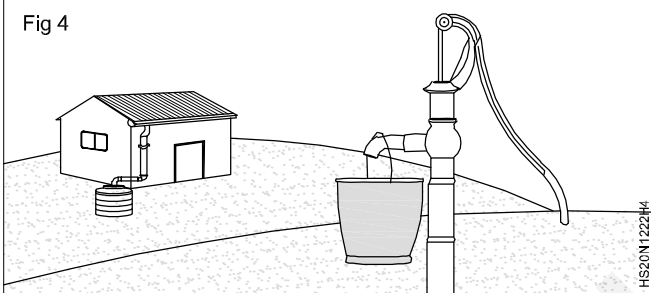
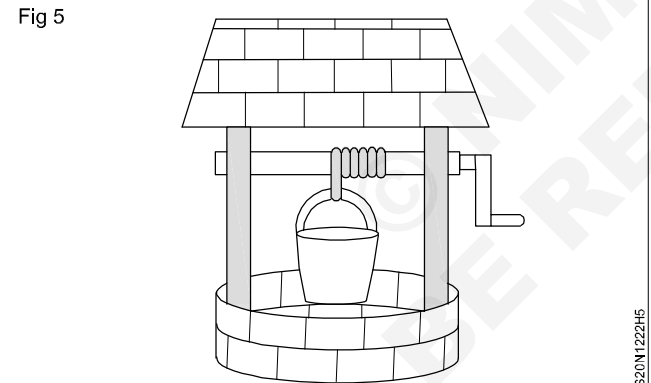
**TASK 1: Classification of water resources and differentiate them**

- 1 Write the nature and type of water resources for the given images provided below under the Table 1.
- 2 Get it checked with the trainer.

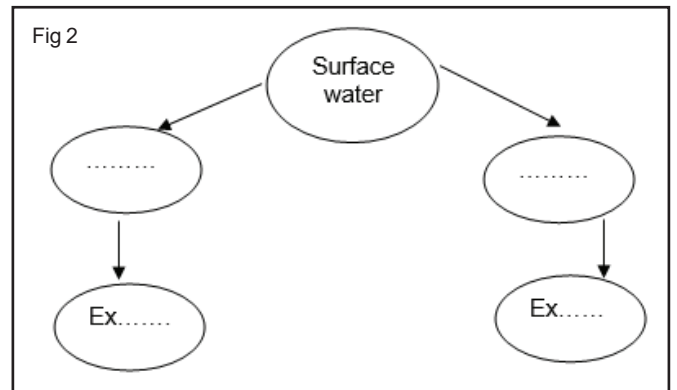
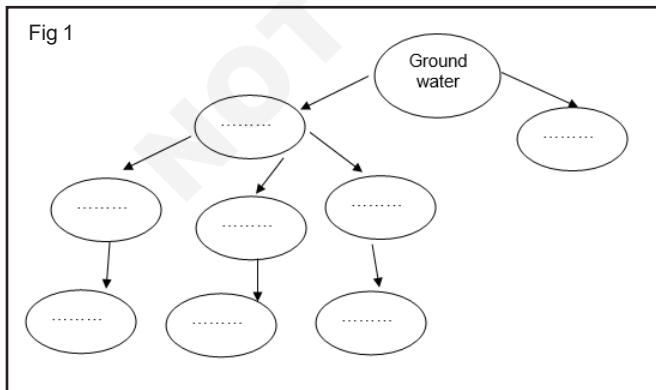
**Table 1**

Sl. No.	Types of water	Name of the water resource	Type of water resource
1	Fig 1 		
2	Fig 2 		



Sl. No.	Types of water	Name of the water resource	Type of water resource
3	<p>Fig 3</p> 		
4	<p>Fig 4</p> 		
5	<p>Fig 5</p> 		

TASK 2: Write down the types of ground water and surface water given in the flow-chart



**Prepare a pie-chart of total availability of water on the earth (Fresh water, salt water, potable water, etc....)**

**Objectives:** At the end of this exercise you shall be able to

- observe the total availability of water on the earth
- prepare a pie-chart to demonstrate the same.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• Chartpaper	- as reqd.
• Pencil & pen	- as reqd.	• LCD Projector	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach trainee regarding the total availability of water on the earth using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Preparation of pie-chart showing the total availability of water on earth**

- 1 Develop a pie-chart demonstrating the total availability of water on earth for the provided data in Table -1
- 2 Get it checked with the trainer

**Table 1**

SI.No	Source of water	%salt water	% fresh water	% total water
1	Fresh ground water	-----	30.1	0.76
2	Fresh water lakes	-----	0.26	0.0066
3	Ground water	-----	----	1.69
4	Saline ground water	0.95%	----	0.93
5	Biological water		0.0032	0.000081

-----

**Tabulate the per capital water demand for domestic purpose**

**Objectives:** At the end of this exercise you shall be able to  
• **tabulate the per capital water demand for domestic purpose.**

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.

**Note: Trainer will teach trainee regarding the various deficiency of diseases with the help of PPT and charts.**

**PROCEDURE**

**TASK 1: Tabulate the per capital water demand for domestic purpose**

- 1 Write down the per capital water demand used for domestic purpose in the given Table 1.
- 2 Get it checked with the trainer.

**Table 1**

<b>S.No</b>	<b>Domestic consumption of water</b>	<b>Amount of water consumption (litres)</b>
1	Drinking	
2	Cooking	
3	Bathing	
4	Clothes washing	
5	Utensils washing	
6	House washing	
7	Total consumption of water	

**Prepare a chart of water demand in different areas such as hospitals, hotels, industries, schools, etc.....**

**Objectives:** At the end of this exercise you shall be able to

- observe the water demand in different areas such as hospitals, hotels, industries, schools, etc....
- prepare a chart and demonstrate the same.

**Requirements**

**Tools/Instruments**

- Computer with internet - as reqd.
- Pencil & pen - as reqd.
- A4 sheet - as reqd.
- Chart paper - as reqd.

**Note:** Trainer will teach trainee regarding the water demand in different areas such as hospitals, hotels, industries, schools, etc....using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Preparation of a chart showing the water demand in different areas**

- 1 Sketch the water demand required for different areas under the given Table 1.
- 2 Get it checked with the trainer.

**Table 1**

Sl.No	Different areas	Water required (lit/head/day)
1	Hospitals	
2	Hotels	
3	Hostels	
4	Boarding schools and colleges	
5	Restaurants	
6	Airport and Seaport	
7	Terminal stations	
8	Day school and colleges	
9	Office	
10	Cinema, concert hall and theater	
11	Factories	
12	Junction station	

**Prepare a chart for impact of polluted water on human health, animals, plants, etc...**

**Objectives:** At the end of this exercise you shall be able to

- observe the impact of polluted water on human health, animals, plants, etc....
- prepare a chart illustrating the same.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• Chart paper	- as reqd.
• Pencil & pen	- as reqd.	• LCD Projector	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach trainee regarding the impact of polluted water on human health, animals, plants, etc... using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Preparation of chart illustrating the impact of polluted water on human health, animals and plants**

- 1 Illustrate the impact of polluted water on human health, animals and plants.      2 Get it checked with the trainer.

- Illustrate the effect of polluted water on human health
  - a .....
  - b .....
  - c .....
  - d .....
  - e .....
  - f .....
- Illustrate the effect of polluted water on animals
  - a .....
  - b .....
  - c .....
  - d .....
  - e .....
- Illustrate the effect of polluted water on human health
  - a .....
  - b .....
  - c .....
  - d .....
  - e .....

-----

**Tabulate the different methods for conservation of water in different areas**

**Objectives:** At the end of this exercise you shall be able to

- identify the different methods for conservation of water in different areas
- tabulate and interpret the various methods for water conservation.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.

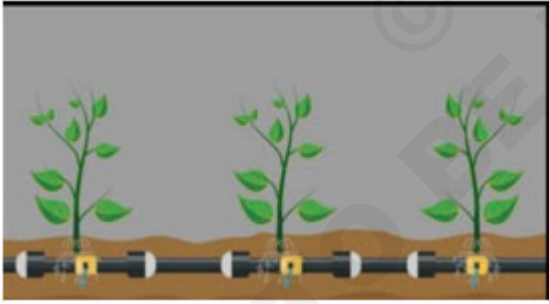
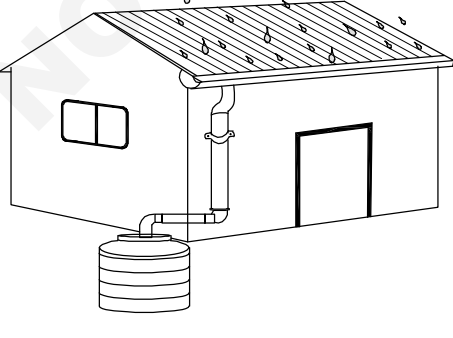
**Note:** Trainer will teach the trainee regarding the different methods for conservation of water in different areas using PPT and pictorial charts.



**PROCEDURE**

**TASK 1: Identification of different methods of water conservation in different areas**

- 1 Write down the water conservation method and interpret the same for the given images under Table 1.
- 2 Get it checked with the trainer.

**Table 1**

S.No	Images	Method of Water conservation	Interpretation
1	<p>Fig 1</p> 		
2	<p>Fig 2</p>  <p style="text-align: right; font-size: small;">HSZON1223H2</p>		

S.No	Images	Method of Water conservation	Interpretation
3	<p>Fig 3</p> 		
4	<p>Fig 4</p> 		

**Draw and sketch a picture of rain water harvesting**

**Objectives:** At the end of this exercise you shall be able to

- illustrate and sketch a picture of rain water harvesting and demonstrate the same.

**Requirements**

**Tools/Instruments**

- |                          |            |
|--------------------------|------------|
| • Computer with internet | - as reqd. |
| • Pencil & pen           | - as reqd. |
| • A4 sheet               | - as reqd. |
| • Chart paper            | - 1 No.    |

**Note:** Trainer will teach the trainee regarding the importance of rain water harvesting using PPT and pictorial charts.

**Project Idea**

- 1 Each trainee is instructed to illustrate and sketch a picture of rain water harvesting separately on their own using a chart paper and demonstrate the diagram individually,
- 2 Get it checked with the trainer



**Identify the differences between potable water, safe and whole some water**

**Objectives:** At the end of this exercise you shall be able to

- identify the differences between potable water, safe and whole some water
- determine the characteristics of different water.

**Requirements**

**Tools/Instruments**

- Computer with internet - as reqd.
- Pencil & pen - as reqd.
- A4 sheet - as reqd.

**Note:** Trainer will instruct the trainee regarding the differences between potable water, safe and whole-some water using suitable charts and PPT.

**PROCEDURE**

**TASK 1: Differentiate between potable water, safe water and whole-some water and determine its characteristics**

- 1 Write down the differences between potable water, safe water and whole-some water and each of its characteristics under Table 1.
- 2 Get it checked with the trainer.

**Table 1**

SI.No	Characteristics of water	Potable water	Safe water	Whole-some water
1	Nature			
2	Suitability			
3	Physical property			
4	Application			
5	Drinking benefits			

-----

**Prepare a chart for physical, chemical and bacteriological quality of water**

**Objectives:** At the end of this exercise you shall be able to

- observe the physical, chemical and bacteriological quality of water
- prepare and develop a chart illustrating the same.

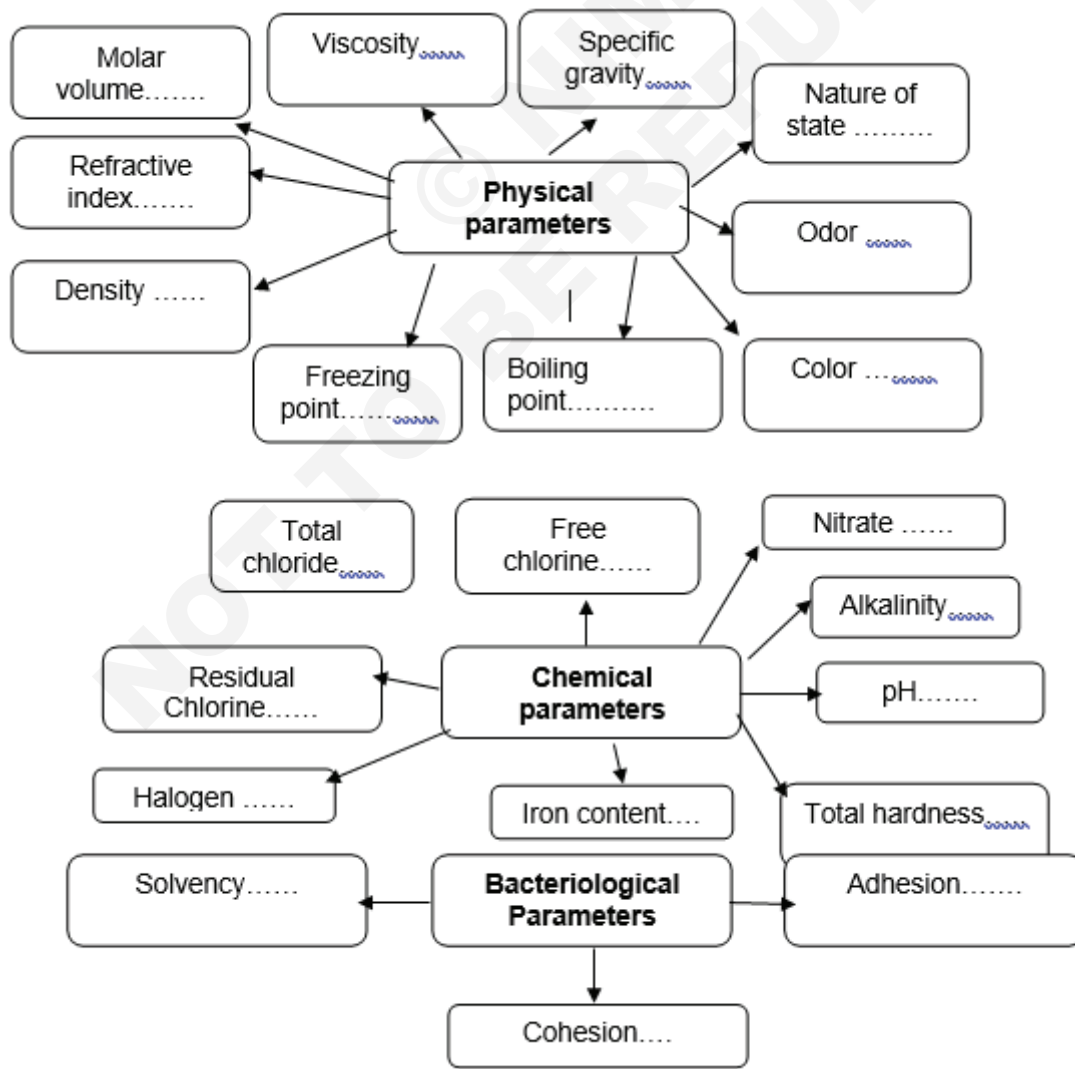
Requirements			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• Chart paper	- as reqd.
• Pencil & pen	- as reqd.	• TDS meter	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainee regarding the physical, chemical and bacteriological quality of water using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Preparation of chart illustrating the physical, chemical and bacteriological quality of water**

- 1 Illustrate a chart showing the physical, chemical and bacteriological quality parameters of water as per the flow diagram demonstrated below
- 2 Get it checked with the trainer.



**Explain the disinfection with various disinfectant for well disinfection**

- Objectives:** At the end of this exercise you shall be able to
- observe the disinfection with various disinfectant for well disinfection
  - demonstrate the same using suitable pictorial diagrams.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD Projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the disinfection with various disinfectant for well disinfection using PPT and suitable charts.

**PROCEDURE**

**TASK 1: Illustrate the procedural aspects followed for well disinfection**

- 1 Sketch the steps used for the disinfection of well using suitable pictorial diagram.
- 2 Get it checked with the trainer.

-----

**TASK 2: Various disinfectant used for well disinfection**

- 1 List down any 5 disinfectant used for well disinfection
  - a .....
  - b .....
  - c .....
  - d .....
  - e .....
- 2 Get it checked with the trainer.

-----

**Prepare the list of sources of water pollution with their different characteristics**

**Objectives:** At the end of this exercise you shall be able to

- identify the list of sources of water pollution and
- prepare the list with their different characteristics and interpret the data.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.

**Note:** Trainer will teach the trainee regarding the various sources of water pollution and their related characteristics using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: : Identification of sources for water pollution**

- 1 Write down any 5 major sources of water pollution
- .....
  - .....
  - .....
  - .....
  - .....

**TASK 2: Preparation of a list of effects caused due to the presence of various contaminants**

- 1 Write down the detrimental effects caused due to the presence of various water contaminants under the given Table 1.      2 Get it checked with the trainer.

**Table 1**

<b>S.No</b>	<b>Water contaminants</b>	<b>Detrimental effects</b>
1	Suspended solids	
2	Biodegradable organics	
3	Refractory organics	
4	Heavy metals	
5	Dissolved Inorganic solid	

**Visit to a water treatment plant**

**Objectives:** At the end of this exercise you shall be able to

- **visit to water treatment plant and observe the water treatment process**
- **interpret the process and demonstrate the same**
- **prepare an individual report.**

**Requirements**

**Tools/Instruments**

- |                            |            |
|----------------------------|------------|
| • Computer with internet   | - as reqd. |
| • Pencil & pen             | - as reqd. |
| • A4 sheet                 | - as reqd. |
| • Water purification plant | - 1 No.    |

**Note: Trainer will take the trainee to the water treatment plants and ask the trainee to observe the water treatment process carried over in the plants using PPT and live demonstrations.**

**PROCEDURE**

**Field Visit**

- 1 Find out a suitable water treatment plant nearby and arrange the trainees for a common visit to the plants on a particular week-day.
- 2 Instruct them to observe the water treatment process carried over in the plants.

**Project Idea**

**Step 1:** Ask the trainee to prepare a report based on their interpretation,

**Step 2:** Instruct the trainee to demonstrate the water treatment process and principles.

**Step 3:** Evaluate the report according to the rubrics.

**Make a diagram of water treatment plant with different process of water purification**

**Objectives:** At the end of this exercise you shall be able to

- identify the different water purification process followed in a water treatment plant
- interpret the water purification process by using a suitable diagram
- demonstrate the same.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• Chart paper	- as reqd.
• Pencil & pen	- as reqd.	• Water purification plant	- 1 No.
• A4 sheet	- as reqd.	• TDS meter	-1 No.

**Note:** Trainer will teach trainee regarding the water purification process followed in the water treatment plant using suitable pictorial charts and PPT.

**PROCEDURE**

**TASK 1: Identification of different water purification process**

- 1 Write down the different water purification processes adopted to remove the selective water impurities as listed in the given Table 1.
- 2 Get it checked with the trainer.

**Table 1**

<b>SI.No</b>	<b>Selective impurities</b>	<b>Purification processes adopted</b>	<b>Interpretation</b>
1	Turbidity and particles		
2	Major dissolved inorganics		
3	Minor dissolved inorganics		
4	Pathogens		

**TASK 2: Demonstration of water purification process using a suitable diagram**

- 1 Sketch the water treatment plant and mark the different purification processes followed in the system using a diagrammatic representation with the help of pictorial charts.
- 2 Get it checked with the trainer.

**Collection and dispatch of water sample for chemical and bacteriological examination**

**Objectives:** At the end of this exercise you shall be able to

- collect water samples and prepare for chemical and biological examination
- arrange the displacement of the water samples for suitable examination.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Pencil & pen	- as reqd.	• Bottle labels	- as reqd.
• A4 sheet	- as reqd.	• Gloves	- as reqd.
• pH meter	- as reqd.	• Disposable mask	- as reqd.
	(optional)		
• Sample Bottles and caps	- as reqd.		

**Note:** Trainer will teach the trainee regarding the procedural ways to collect water samples and insist them to arrange for chemical and biological examination and instruct them to demonstrate the same.

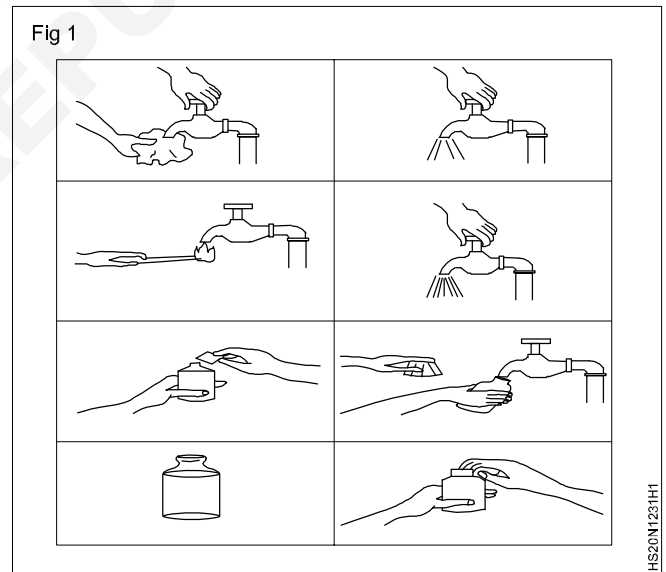
**PROCEDURE**

**TASK 1: Sketch the procedure for the collection of water samples for examination**

1 Write the steps involved in the collection and preparation of water samples for suitable testing as per the given image 1.

2 Get it checked with the trainer.

- Step 1 .....
- Step 2 .....
- Step 3 .....
- Step 4 .....
- Step 5 .....
- Step 6 .....
- Step 7 .....
- Step 8 .....



**Prepare and construct a purification system in the rural areas**

**Objectives:** At the end of this exercise you shall be able to

- identify the water purification system applicable for rural areas
- prepare a sketch and construct a purification system for the rural community
- demonstrate the same.

Requirements			
Tools/Instruments			
• Computer with internet	- as reqd.	• Chart paper	- as reqd.
• Pencil & pen	- as reqd.	• Water purification plant	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will instruct the trainee observe the water purification system applicable for rural areas and ask the trainee to prepare a sketch and construct a purification system for the rural community and demonstrate the same.

**PROCEDURE**

**TASK 1: Identification of water purification system applicable for rural areas**

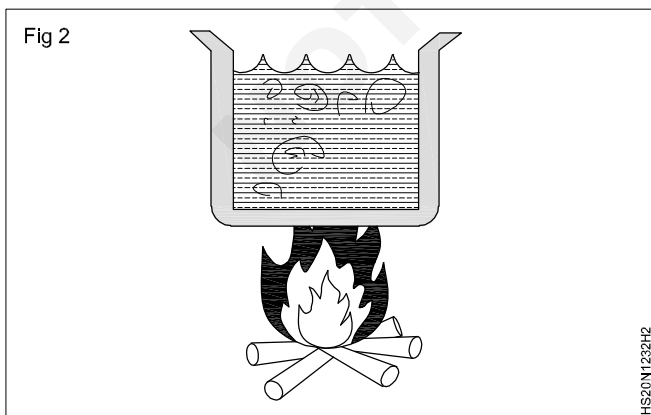
1 Write down the type of water treatment process adopted in the rural areas for the given images listed below.

2 Get it checked with the trainer.

Process Type 1.....

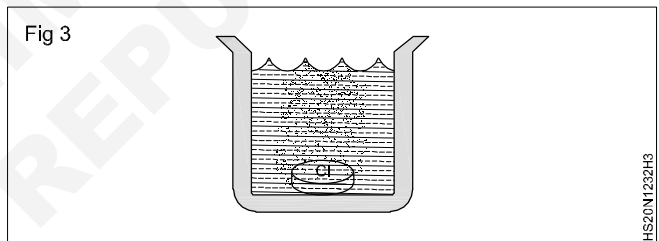


Process Type 2.....

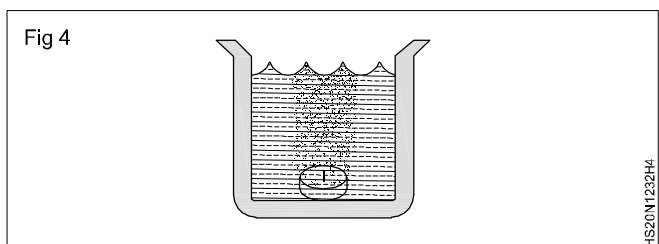


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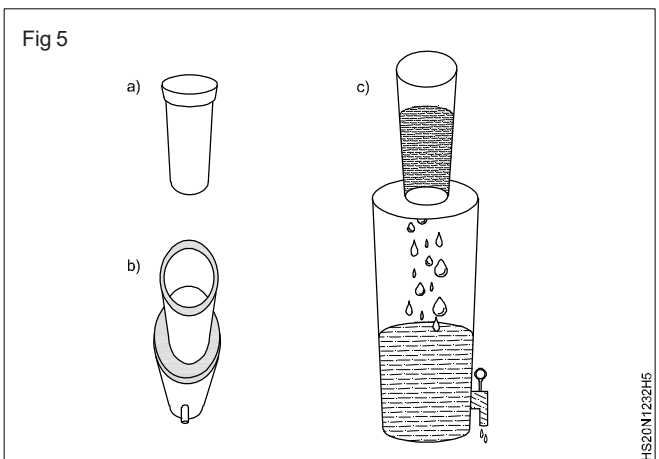
Process Type 3.....



Process Type 4.....

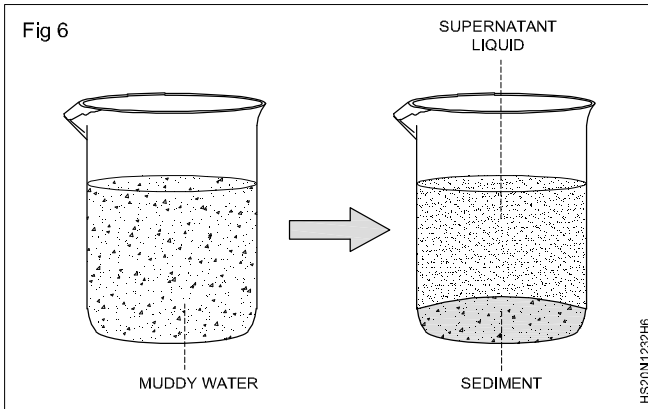


Process Type 5.....

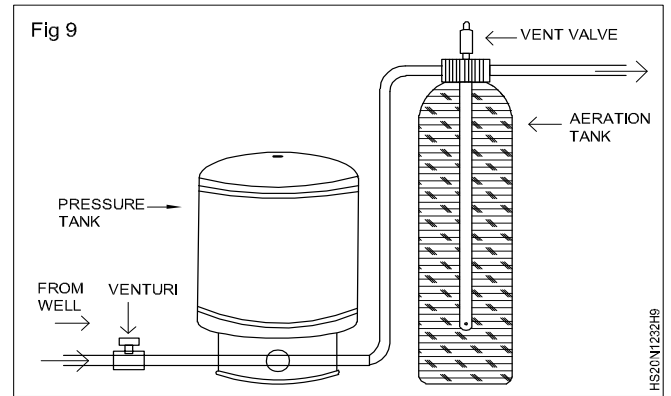




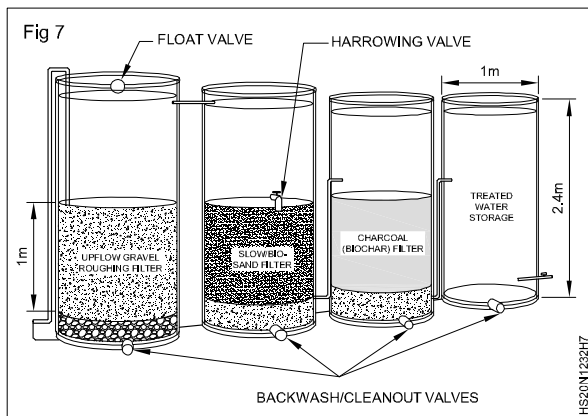
Process Type 6.....



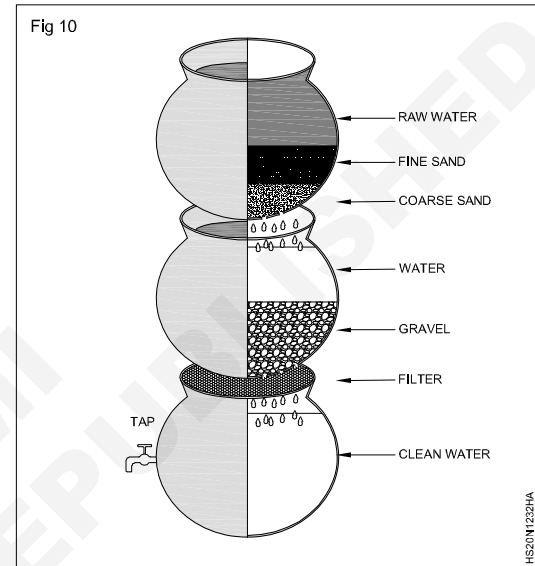
Process Type 9.....



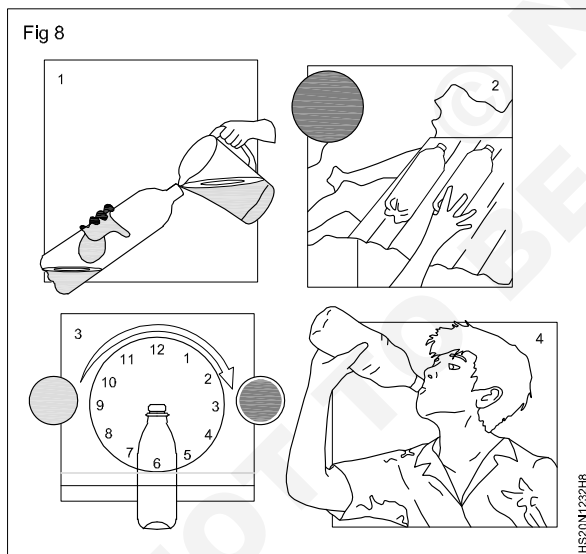
Process Type 7.....



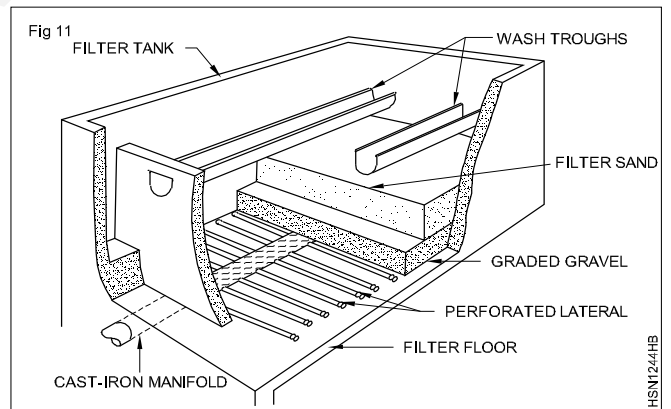
Process Type 10.....



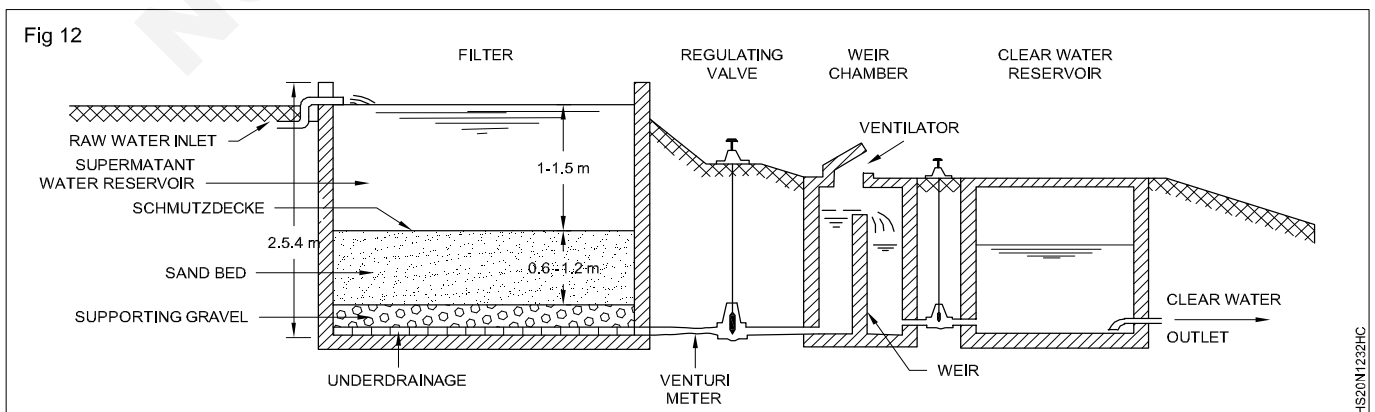
Process Type 8.....



Process Type 11.....



Process Type 12.....



**TASK 2: Construction aspects to be considered to set-up water purification system at rural areas**

- 1 Write the economical comparison of water treatment process adopted in the rural areas for the given treatment type as per the Table 1 given below.
- 2 Get it checked with the trainer.

**Table 1**

Sl.No	Treatment type	Treatment process	Construction cost	Operation cost
1	Boiling			
2	Filtration			
3	Sedimentation			
4	Solar disinfection			
5	Three pot method			
6	Aeration			
7	Chlorination			

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**Calculate the chlorine demand and prepare the graph also for residual chlorine in water**

**Objectives:** At the end of this exercise you shall be able to

- calculate the chlorine demand and estimate the residual chlorine present in water and
- prepare a graph for interpreting the actual demand of chlorine in water.

**Requirements**

**Tools/Instruments**

- Computer with internet - as reqd.
- Pencil & pen - as reqd.
- A4 sheet - as reqd.
- Graph/Chart - as reqd.
- LCD Projector - 1 No.

**Note:** Trainer will teach trainee regarding the mathematical formulas to calculate the chlorine demand and estimating the residual chlorine in water using OHP/LCD projector and charts.

**PROCEDURE**

**TASK 1: Calculation of chlorine demand present in water**

- 1 Trainee need to assess the following results of different sample tested for chlorine demand as furnished under Table 1 and estimate the break-point dosage and chlorine demand using appropriate formula noted below.
- 2 Prepare a graph for the estimated results and interpret the same
- 3 Get it checked with the trainer.

**Table 1**

Results of chlorine demand test on a raw water are given below. Determine the break-point dosage and the chlorine demand for the same

Sample No	Chlorine dosage (mg/l)	Residual chlorine after 10 min contact (mg/l)
1	0.2	0.38
2	0.4	0.48
3	0.6	0.46
4	0.8	0.27
5	1.0	0.18

**Note:** Chlorine Dose: Demand and Residual

The chlorine dose required depends on two considerations: the chlorine demand and the desired chlorine residual

$$\text{Dose, mg/L} = \text{Demand, mg/L} + \text{Residual, mg/L}$$

**Collect the water sample from the domestic taps, surface and ground**

**Objectives:** At the end of this exercise you shall be able to

- collect the water sample from domestic taps, surface and ground water resources
- segregate and prepare the different samples ready for examination.

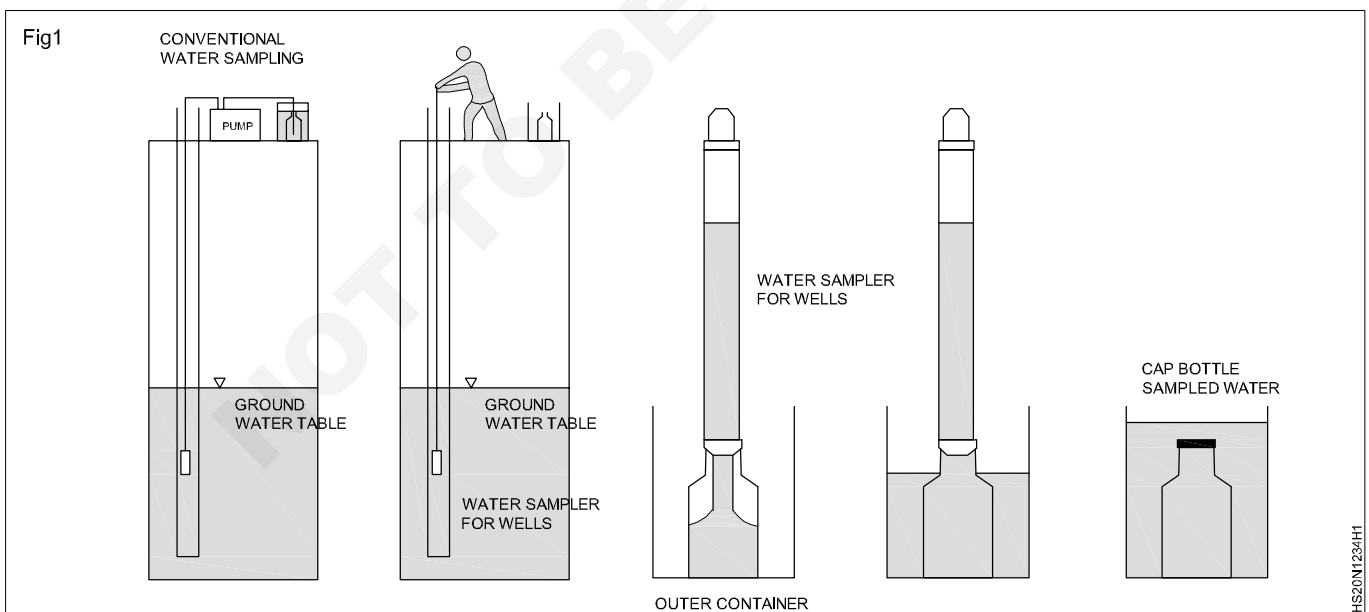
Requirements			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• Bottle labels	- as reqd.
• Pencil & pen	- as reqd.	• Gloves	- as reqd.
• A4 sheet	- as reqd.	• Disposable masks	- as reqd.
• Sample bottles and caps	- as reqd.		

**Note:** Trainer will teach the trainee regarding the procedural ways to collect water samples from domestic taps, surface and ground water resources and insist them to arrange for examination and instruct them to demonstrate the same.

**PROCEDURE**

**TASK 1: Sketch the procedure for the collection of water sample from ground water for examination**

- |   |              |
|---|--------------|
| 1 Write the steps involved in the collection and preparation of water samples from surface water resources for suitable testing as per the given image 1. | Step 1 ..... |
|   | Step 2 ..... |
|   | Step 3 ..... |
| 2 Get it checked with the trainer.  | Step 4 ..... |
|   | Step 5 ..... |



**TASK 2: Sketch the procedure for the collection of water sample from surface water for examination**

- 1 Write the steps involved in the collection and preparation of water samples from surface water resources for suitable testing as per the given image 2.
- 2 Get it checked with the trainer.

- Step 1 .....
- Step 2 .....
- Step 3 .....
- Step 4 .....
- Step 5 .....

Fig 2



-----

**TASK 3: Sketch the procedure for the collection of water sample from domestic taps for examination**

(Note: For carrying out the task 3, please refer the exercise 1.1.45)

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**Perform the practical for physical and chemical parameters of given water sample in testing labs**

**Objectives:** At the end of this exercise you shall be able to

- collect the water sample in bottles and arrange for testing in labs
- assess the physical and chemical characteristics of water sample with respect to standards
- infer and interpret the lab results.

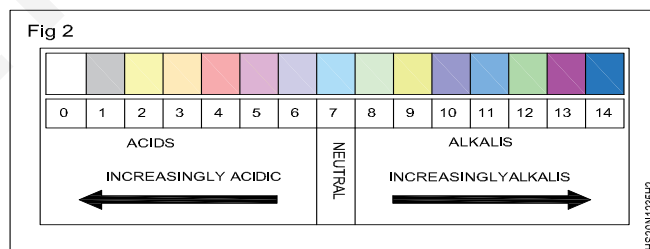
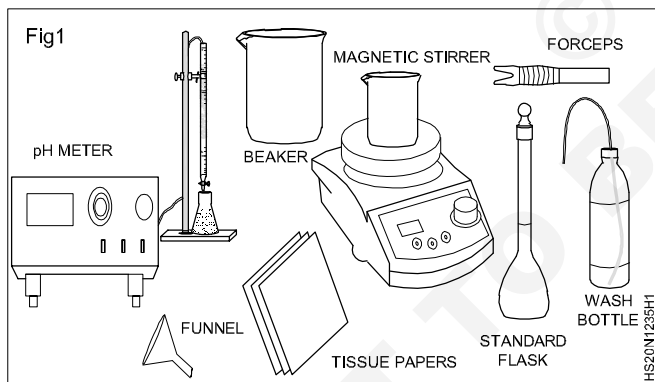
Requirements			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• Disposable masks	- as reqd.
• Pencil & pen	- as reqd.	• LCD projector	- 1 No.
• A4 sheet	- as reqd.	• pH meter	- 1 No.
• Sample bottles and caps	- as reqd.	• TDS meter	- 1 No.
• Bottle labels	- as reqd.		
• Gloves	- as reqd.		

**Note:** Trainer will teach the trainee regarding the various physical and chemical standards pertaining to water quality and instruct the trainee to assess the same using necessary safety precautions.

**PROCEDURE**

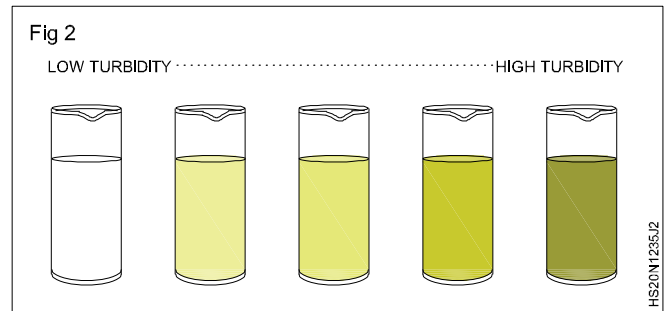
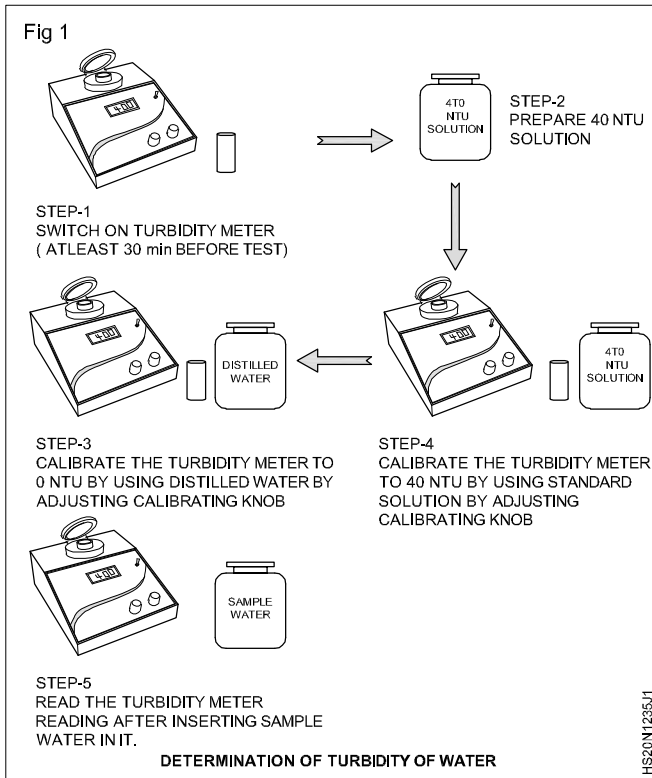
**TASK 1: Determination of pH of the water sample**

- 1 Prepare the water sample ready for assessing the pH value as per the Fig 1 illustrated below.
- 2 Use Ph meter to assess the value.
- 3 Compare the tested value with the reference value given in Fig 2 and submit a report.



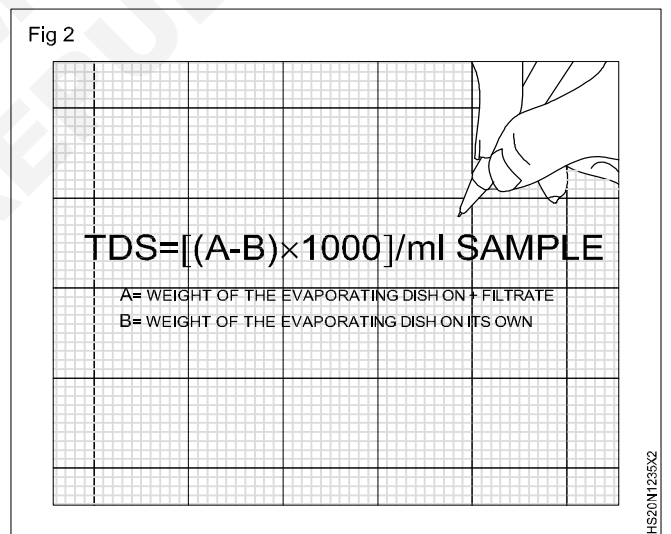
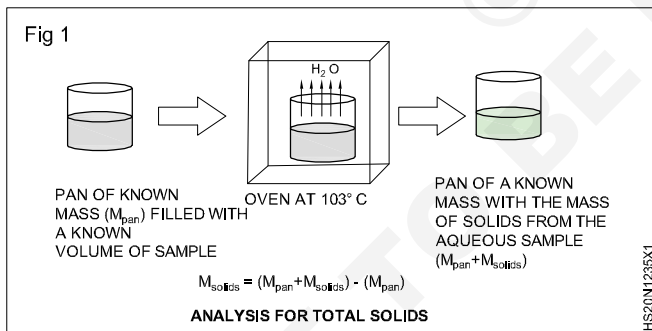
**TASK 2: Determination of Turbidity of the water sample**

- 1 Prepare the water sample ready to determine the Turbidity as per the Fig 1 illustrated below.
- 2 Use Turbidity meter to assess the value.
- 3 Compare the tested value with the reference value given in Fig 2 and submit a report.



### TASK 3: Determination of TDS of the water sample

- 1 Prepare the water sample ready to determine the TDS as per the Fig 1 illustrated below.
- 2 Use TDS formula to assess the value.
- 3 Compare the tested value with the reference value given in Fig 2 and submit a report.

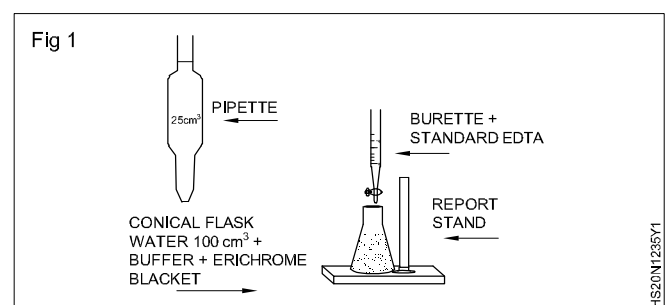


### TASK 4: Determination of Hardness of the water sample

- 1 Prepare the water sample ready to determine the hardness as per the Fig 1 illustrated below.
- 2 In a hard water sample, the total hardness can be determined by titrating the  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$  present in an aliquot of the sample with  $\text{Na}_2\text{EDTA}$  solution, using  $\text{NH}_4\text{Cl}-\text{NH}_4\text{OH}$  buffer solution of pH 10 and Eriochrome Black-T as the metal indicator.

**Water Hardness Standards: Hard: 120-180mg/L & Very Hard: >180mg/L**

- 3 Compare the tested value with the reference value given above and submit a report.



**TASK 5: Determination of chloride for the given water sample**

- 1 Prepare the water sample ready to determine the chloride (mg/l) as per the Table 1 given below.
- 2 Report all the readings in Table 1 and submit a report.
- 3 Refer Table 1 below for calculating the chloride content.

**Table 1 -Preparation of water sample to assess chloride content**

Water Sample vs Silver nitrate (0.0141 N) (Potassium chromate indicator)						
Sample no.	Trial no.	Volume of sample	Burette reading		Volume of silver nitrate (ml.)	Chloride mg/L.
			Initial	Final		
1	1					
	2					
	3					
2	1					
	2					
	3					
3	1					
	2					
	3					
Distilled water	1					
	2					
	3					

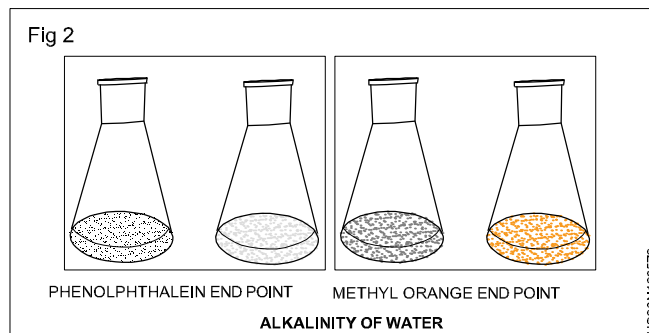
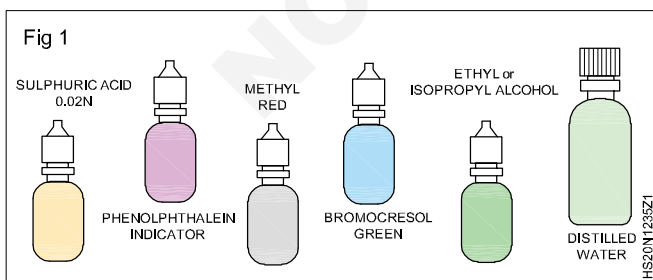
$V =$   
 $V_1 =$   
 $V_2 =$   
 $N =$

$$= \frac{(V_1 - V_2) \times 500}{V} = \dots\dots\dots \text{mg/L}$$

$$\text{Chloride in mg/L} = \frac{(V_1 - V_2) \times N \times 35.46 \times 1000}{V}$$

**TASK 6: Determination of acidity and alkalinity for the given water sample**

- 1 Prepare the water sample ready to determine the alkalinity and acidity as per the requirements demonstrated below in Fig 1.
- 2 Compare the tested value with the reference given in Fig 2 below and submit a report.





**Show the difference between water and sewage with given samples in the bottles in the testing labs**

**Objectives:** At the end of this exercise you shall be able to

- collect the pure and waste water sample in bottles and arrange for testing in labs
- identify the differences between pure water and waste-water.

Requirements			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• Bottle labels	- as reqd.
• Pencil & pen	- as reqd.	• Gloves	- as reqd.
• A4 sheet	- as reqd.	• Disposable masks	- as reqd.
• Sample bottles and caps	- as reqd.	• LCD projector	- 1 No.

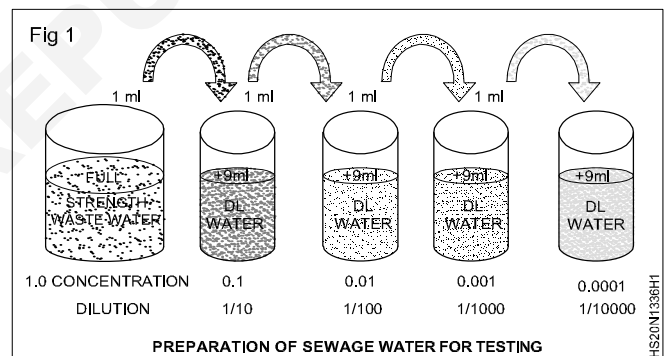
**Note:** Trainer will teach the trainee regarding the difference between water and sewage water through PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Sketch the procedure for the collection of sewage water sample for examination**

- 1 Write the steps involved in the collection and preparation of waste water sample for suitable testing as per the given image 1.
- 2 Get it checked with the trainer.

**Fig 1 - Preparation of sewage water for testing**



**TASK 2: Identification of suitable difference between pure water and waste water**

- 1 Write down the differences between pure water and waste water characteristics in the given Table 1.
- 2 Get it checked with the trainer.

**Table 1**

<b>Characteristic</b>	<b>Pure water</b>	<b>Sewage water</b>
Color		
Smell		
pH value		
Water hardness		
Dissolved solids		
Solid deposits		
Organic substances		
Inorganic salts		
Heavy metal content		

-----

**Health Sanitary Inspector - Waste Management & Air and Noise Pollution**

**Categorizes the numerous impact of night soil on the water bodies, atmosphere, soil, etc**

**Objectives:** At the end of this exercise you shall be able to

- categorize the impact of night soil on the water bodies, atmosphere and soil
- sketch the diseases caused due to the impact of night soil on the water bodies, atmosphere and soil.

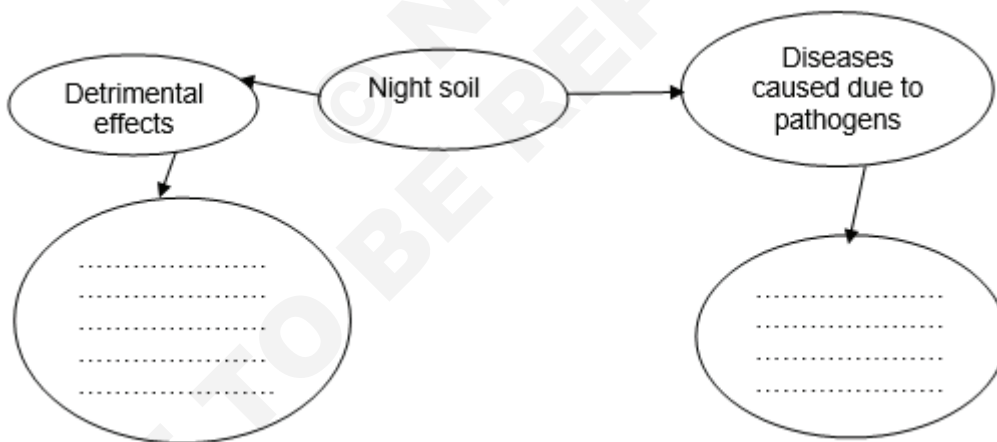
<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD Projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the impact of night soil on the water bodies, atmosphere and soil using PPT and suitable charts.

**PROCEDURE**

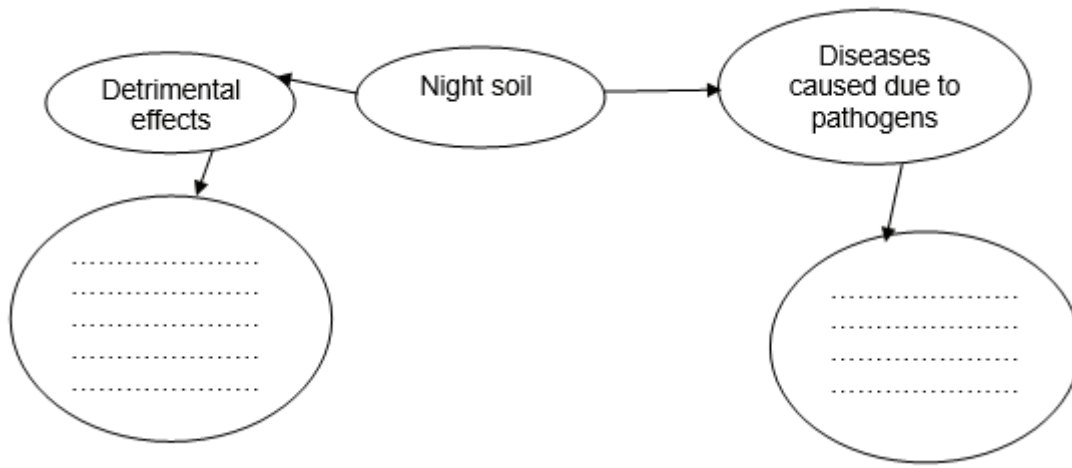
**TASK 1: Categorize the impact of night soil on water bodies and the related diseases**

- 1 Sketch the detrimental effects of night soil on water bodies and related diseases caused due to pathogens.
- 2 Get it checked with the trainer.



**TASK 2: Categorize the impact of night soil on atmosphere and the related diseases**

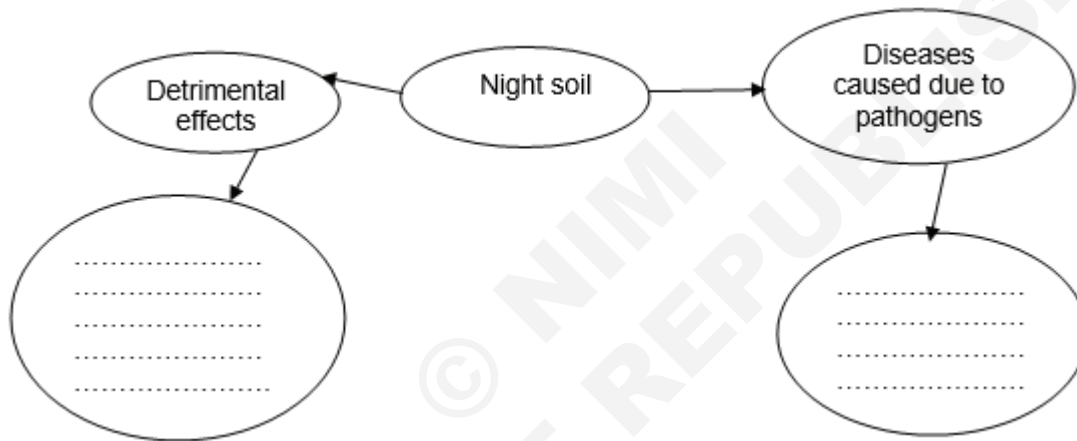
- 1 Sketch the detrimental effects of night soil on atmosphere and related diseases caused due to pathogens.
- 2 Get it checked with the trainer.



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**TASK 3: Categorize the impact of night soil on soil and the related diseases**

- 1 Sketch the detrimental effects of night soil on soil and related diseases caused due to pathogens.
- 2 Get it checked with the trainer.



**Tabulate numerous impact of food chain and impact of food contamination on human bodies**

**Objectives:** At the end of this exercise you shall be able to

- tabulate the impact of food chain contamination
- sketch the impact of different food contaminants and its related diseases on human bodies.

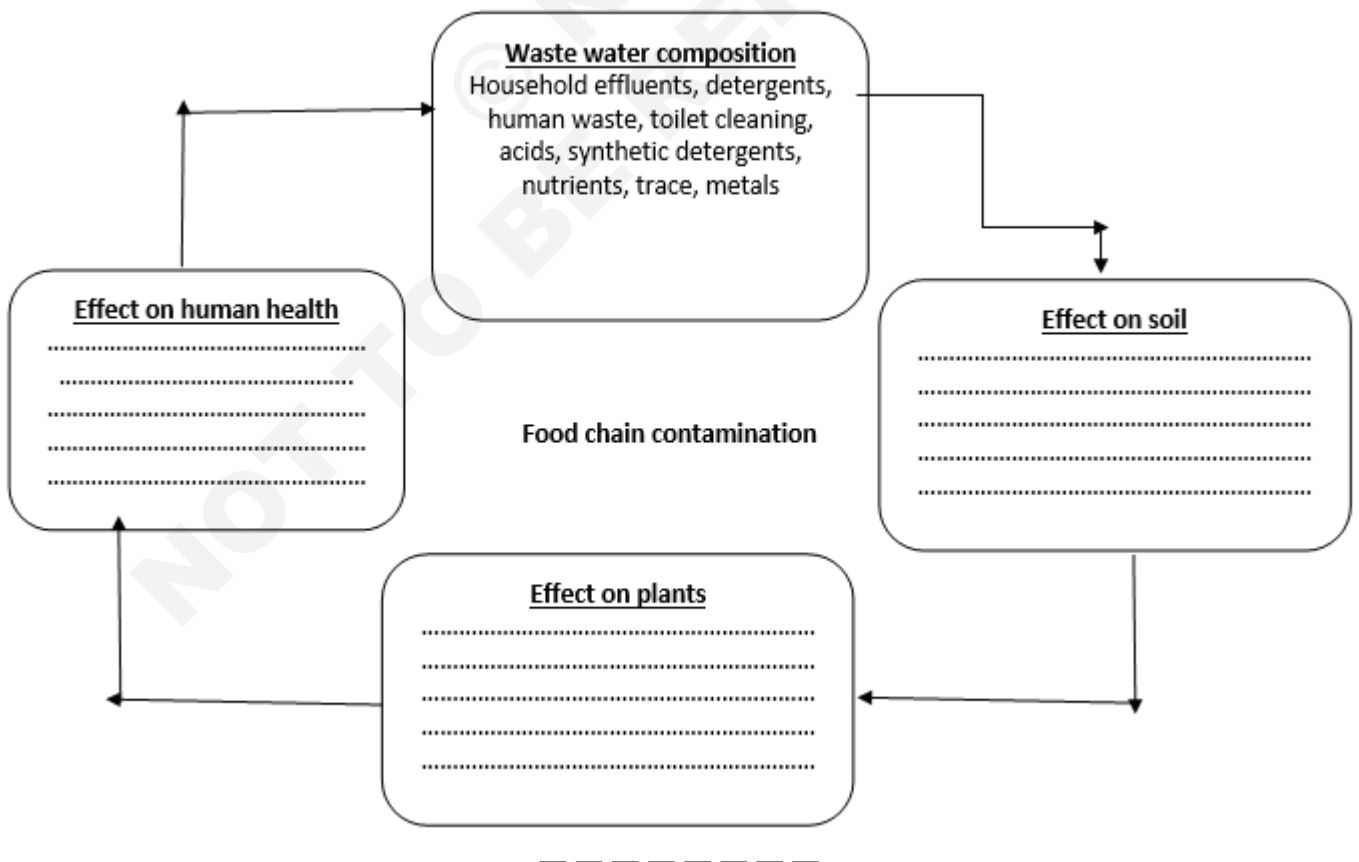
<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD Projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the impact of food chain and impact of food contamination on human bodies using PPT and suitable charts.

**PROCEDURE**

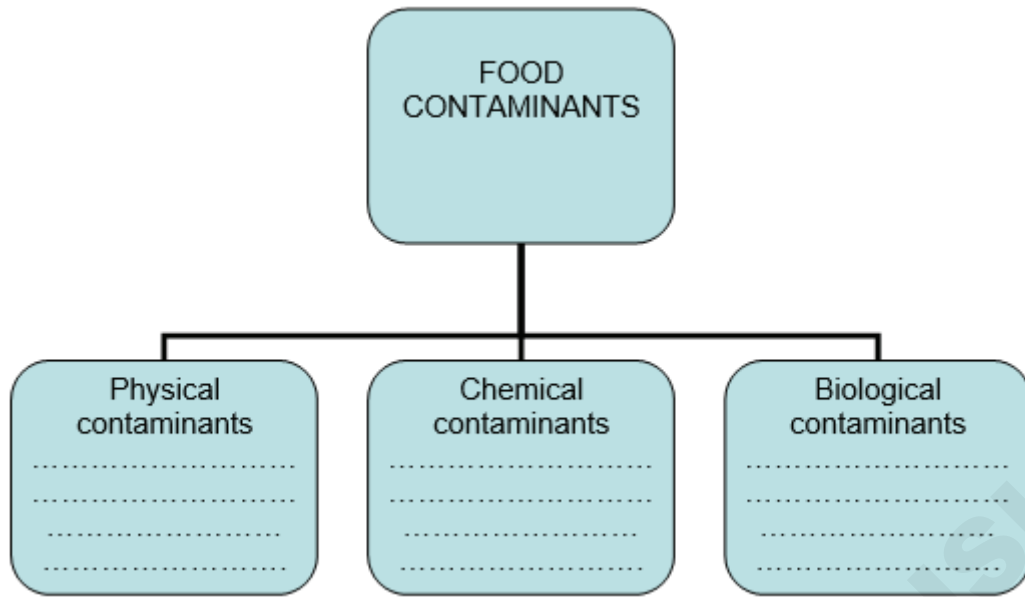
**TASK 1: Tabulation of Impact of food chain contamination**

- 1 Write down the impact of food chain contamination and its various effect on plants, soil and human health.



**TASK 2: Sketch the impact of different food contaminants on human bodies**

- 1 Write down the sources of food contamination under the given diagram 1
- 2 Get it checked with the trainer.



**TASK 3: Sketch the related diseases on human bodies due to food contamination**

- 1 Write down the related diseases associated with the different food contaminants on human bodies as per the given Table 1.
- 2 Get it checked with the trainer.

**Table 1**

SI.No	Contaminants	Diseases/Health effects caused
1	Lead	
2	Nitrate	
3	Plastic	
4	Glass	
5	Bacteria	
6	Parasites	
7	Pesticides	

**Prepare a chart for various diseases due to unsanitary disposal of night soil**

**Objectives:** At the end of this exercise you shall be able to

- identify the type of disease occurring due to unsanitary disposal of night soil
- prepare a chart and demonstrate the same.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD Projector	- 1 No.
• Pencil & pen	- as reqd.	• Chart paper	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainee regarding the various diseases due to unsanitary disposal of night soil using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Identification of various disease caused due to unsanitary disposal of night soil**

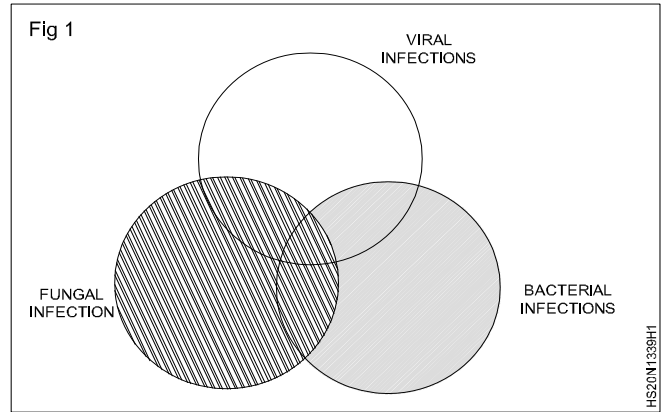
- 1 Write down the type of disease and the related symptoms caused due to various pathogenic micro-organism as per the Table 1 given below.
- 2 Get it checked with the trainer.

**Table 1**

<b>SI.No</b>	<b>Pathogens</b>	<b>Type of disease</b>	<b>Related Symptoms</b>
1	Enteroviruses		
2	Hepatitis A		
3	Rotavirus		
4	E-Coli		
5	Salmonella typhi		
6	Vibrio cholera		
7	Entamoeba histolytics		
8	Giardia lamblia		
9	Ascaris		
10	Hookworm		

**TASK 2: Prepare a chart and demonstrate the same**

- 1 Sketch the various form of infections caused by various micro-organisms due to unsanitary disposal of night soil as represented in the vector diagram below.
- 2 Get it checked with the trainer.



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**Describe the construction and maintenance of service and non-service type latrines, bore hole, dug well, RCA, septic tank, sulabh souchalaya**

**Objectives:** At the end of this exercise you shall be able to

- identify the differences between service and non-service type latrines
- describe the construction aspects of service and non-service type latrines, bore-hole, dug well, RCA, septic tank and sulabh souchalaya
- demonstrate the maintenance, advantages and disadvantages of the same.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD Projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the constructional aspects, maintenance, advantages and limitations of service and non-service type latrines bore hole, dug well, RCA, septic tank, sulabh souchalaya using PPT and suitable pictorial charts.

**PROCEDURE**

**TASK 1: Identification of the difference between service and non-service type latrines**

- 1 Write down the differences between service and non-service type latrines under the given Table 1.
- 2 Get it checked with the trainer.

**Table 1**

<b>Sl.No</b>	<b>Service type latrines</b>	<b>Non-service type latrines</b>
1		
2		
3		
4		
5		

-----

**TASK 2: Describe the construction and maintenance aspects of the bore-hole latrine image represented in Fig 1**

- 1 Fill up the construction aspects, maintenance, advantages and disadvantages of bore-hole under the given Table 1.
- 2 Get it checked with the trainer.

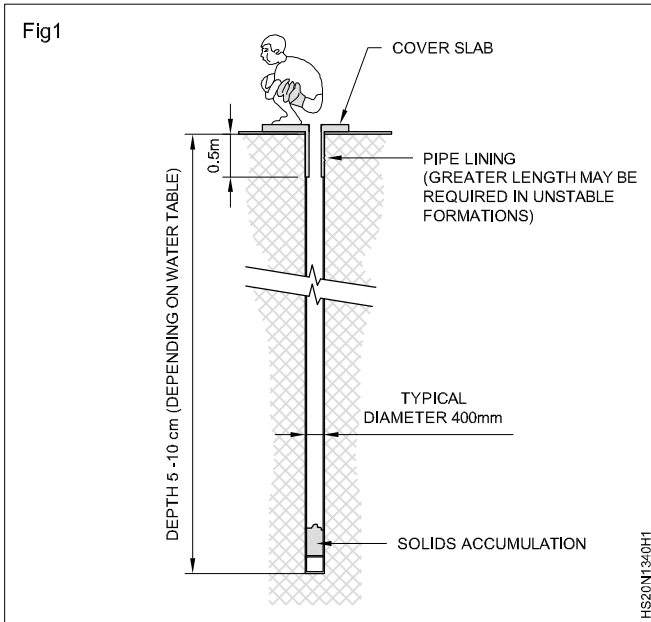


Table 1

SI.No	Constructional features	Maintenance tips	Advantages	Disadvantages
1				
2				
3				
4				
5				

**TASK 3: Describe the construction and maintenance aspects of the RCA latrine image represented in Fig 1**

- 1 Fill up the construction aspects, maintenance, advantages and disadvantages of bore-hole under the given Table 2.
- 2 Get it checked with the trainer.

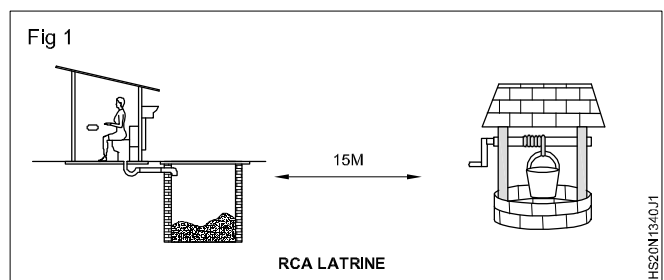


Table 2

SI.No	Constructional features	Maintenance tips	Advantages	Disadvantages
1				
2				
3				
4				
5				

TASK 4: Describe the construction and maintenance aspects of the dug well image represented in Fig 1

- 1 Fill up the construction aspects, maintenance, advantages and disadvantages of bore-hole under the given Table 3.
- 2 Get it checked with the trainer.

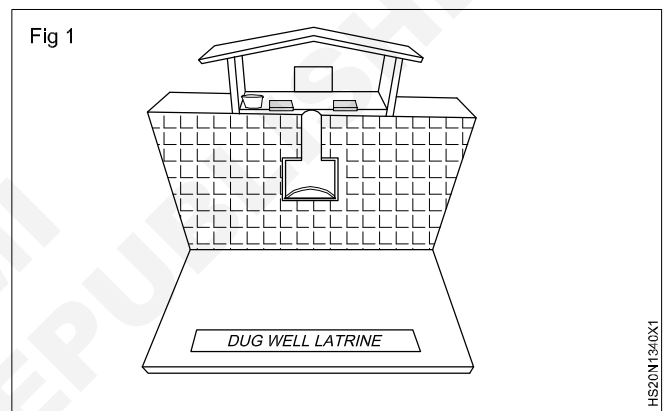


Table 3

SI.No	Constructional features	Maintenance tips	Advantages	Disadvantages
1				
2				
3				
4				
5				

TASK 5: Describe the construction and maintenance aspects of the septic tank image represented in Fig 1

- 1 Fill up the construction aspects, maintenance, advantages and disadvantages of bore-hole under the given Table 4.
- 2 Get it checked with the trainer.

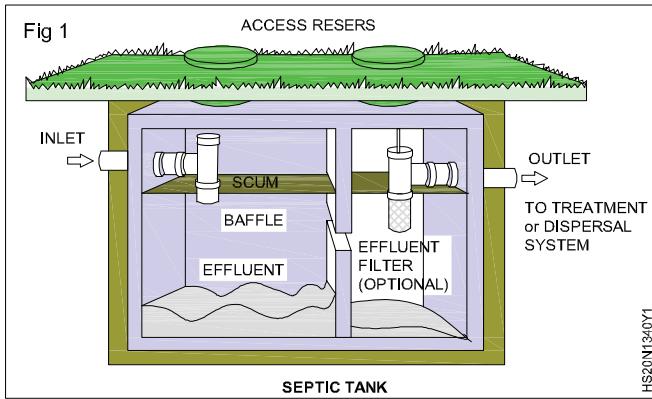


Table 4

SI.No	Constructional features	Maintenance tips	Advantages	Disadvantages
1				
2				
3				
4				
5				

**TASK 6: Describe the construction and maintenance aspects of the septic tank image represented in Fig 1**

- 1 Fill up the construction aspects, maintenance, advantages and disadvantages of bore-hole under the given Table 5.
- 2 Get it checked with the trainer.



Table 5

SI.No	Constructional features	Maintenance tips	Advantages	Disadvantages
1				
2				
3				
4				
5				

**Visit to sulabh souchalaya**

**Objectives:** At the end of this exercise you shall be able to

- visit to sulabh souchalaya and observe the constructional parameters, operation and maintenance aspects related to the same
- interpret the features and demonstrate the same
- prepare an individual report.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD Projector	- 1 No.

**Note:** Trainer will take the trainee to sulabh souchalaya nearby and instruct the trainee to observe the constructional aspects, operation and maintenance of the unit using suitable demonstrations and pictorial charts.

**PROCEDURE**

**Field Visit**

- 1 Find out a sulabh souchalaya unit nearby and arrange the trainees for a common visit to the plants on a particular week-day.
- 2 Instruct them to observe the constructional aspects, operation and maintenance of sulabh souchalaya as per the points noted below.

**Observations to be noted**

- 1 Constructional aspects of sulabh souchalaya in the minimum possible space
- 2 Advantages of single pit and two-pit system in sulabh souchalaya
- 3 Fixing procedures of Pan and trap
- 4 Interconnection between trap and pits
- 5 Shape, lining, space and sizing of pits
- 6 Pits in High Subsoil, Water Logged and Flood Prone Areas
- 7 How to prevent pollution in sulabh souchalaya?

**Project Idea**

**Step 1:** Ask the trainee to prepare a report based on their interpretation,

**Step 2:** Instruct the trainee to demonstrate the same

**Step 3:** Evaluate the report according to the rubrics

-----

**Demonstrating the construction and maintenance of trenching ground**

**Objectives:** At the end of this exercise you shall be able to

- sketch and demonstrate the constructional process of trenching ground
- interpret the maintenance aspects of the sewers and
- identify the various hazards and preventive measures to overcome the same.

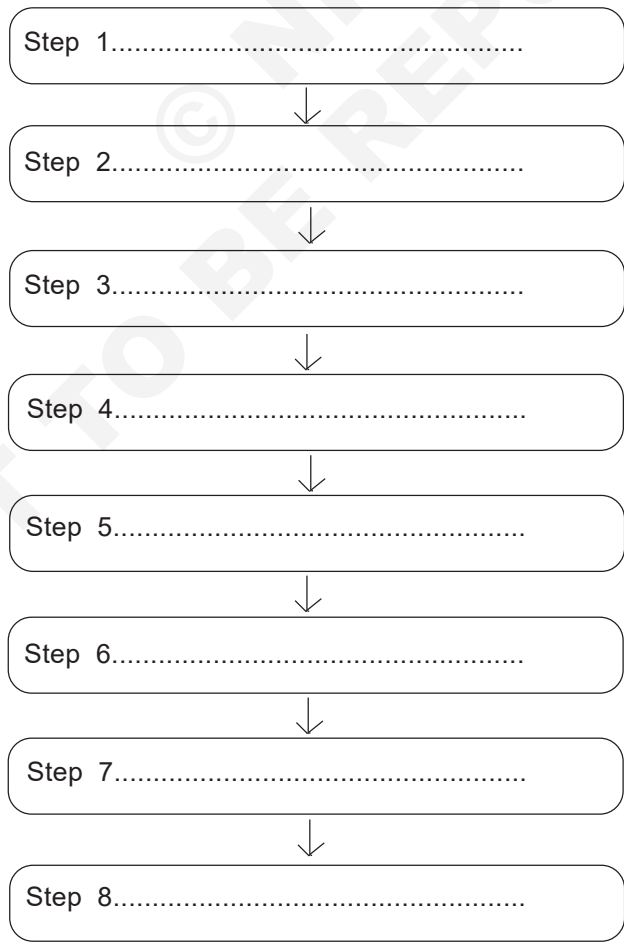
Requirements	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD Projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the constructional aspects and maintenance of trenching ground using PPT and suitable charts.

**PROCEDURE**

**TASK 1: Sketch the constructional process of trenching ground in the form of a flowchart**

- 1 Illustrate the different steps involved in the constructional process of trenching ground in the flow diagram given below
- 2 Get it checked with the trainer.



**TASK 2: Maintenance aspects of the sewers**

- 1 Write down the duration adopted for the periodic maintenance of the sewers as listed in the Table 1 below
- 2 Get it checked with the trainer.

**Table 1**

SI.No	Period of Inspection	Duration
1	Sewers on flat grades	
2	Sewers troubled by roots	
3	Sewers having no trouble	
4	Intercepting sewers	
5	Flushing tanks	
6	Storm water flows	

**TASK 3: Hazard Identification and Preventive measures of the sewers**

- 1 Write down the different hazards, precaution and safety equipment's followed in the sewers under the given Table 2.
- 2 Get it checked with the trainer.

**Table 2**

SI.No	Type of Hazard	Precaution	Safety equipment required
1			
2			
3			
4			
5			
6			

**Identify resources if increasing solid waste**

**Objectives:** At the end of this exercise you shall be able to

- **identify resources of increasing solid waste.**

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD Projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the various resources of increasing solid waste using PPT and charts.

**PROCEDURE**

**TASK 1: Identify resources of increasing solid waste**

- 1 Write down the influencing reasons for increase in the solid waste with relevant examples for the given factors as listed in Table 1 below.
- 2 Get it checked with the trainer.

**Table 1**

<b>Sl.No</b>	<b>Factors affecting solid waste increase</b>	<b>How it influences the increase in solid waste?</b>	<b>Relevant Examples</b>
1	Overpopulation		
2	Urbanization		
3	Growing technology		



**Tabulate the category of solid waste based on sources**

**Objectives:** At the end of this exercise you shall be able to

- **categorize the solid waste based on sources.**

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD Projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the different categories of solid waste based on sources using PPT and charts.

**PROCEDURE**

**TASK 1: Categorize the solid waste based on sources**

- 1 Write down the different categories of the solid waste based on sources as per the Table 1 given below.
- 2 Get it checked with the trainer.

**Table 1**

<b>SI.No</b>	<b>Category</b>	<b>Sources</b>
1	Residential	
2	Industrial	
3	Commercial	
4	Institutional	
5	Construction and demolition	
6	Agriculture	
7	Bio-medical	
8	E-waste	

-----

**Classify solid waste according to their different properties such as medical, municipal, commercial, construction**

**Objectives:** At the end of this exercise you shall be able to

- classify solid waste according to their different properties such as medical, municipal, commercial and construction.

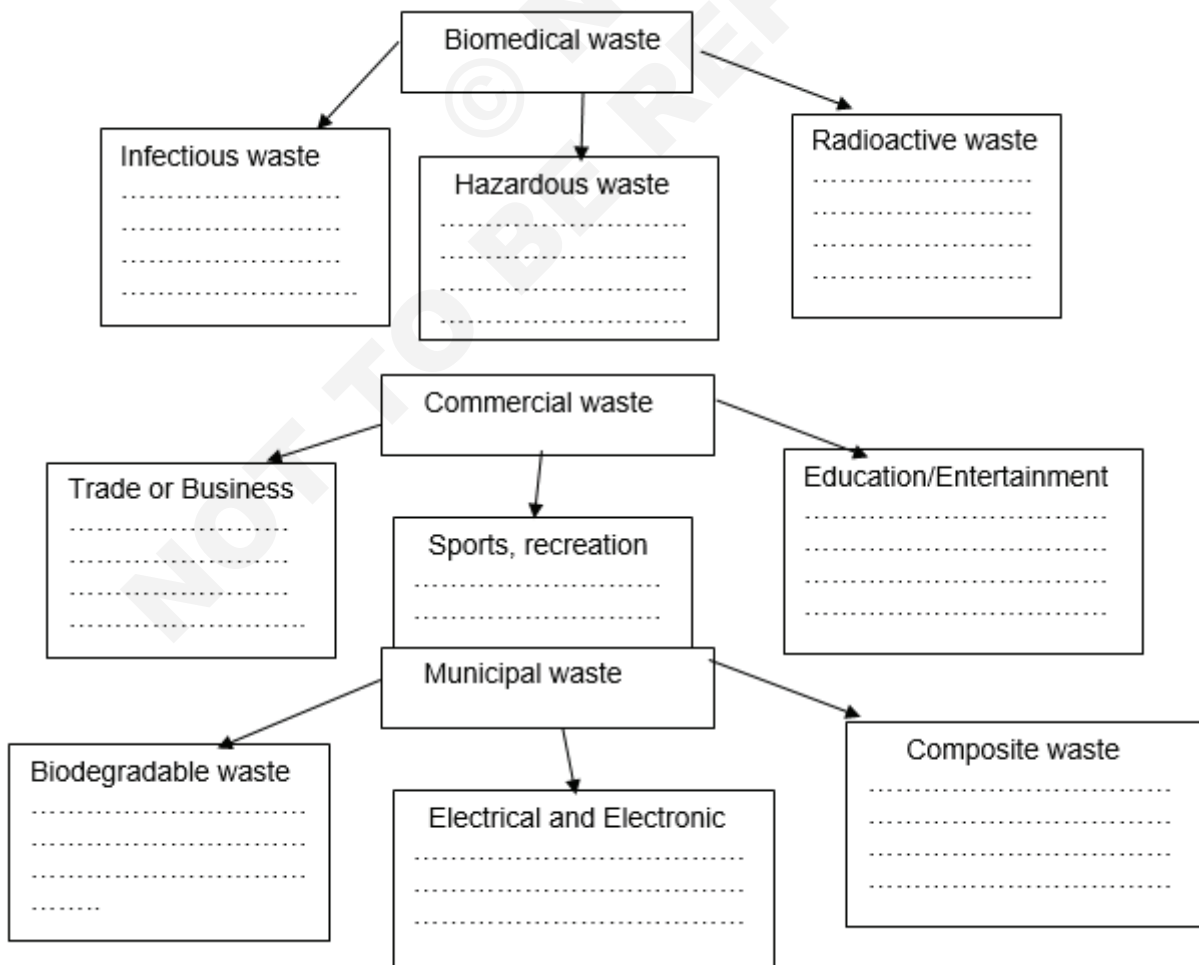
Requirements	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD Projector	- 1 No.

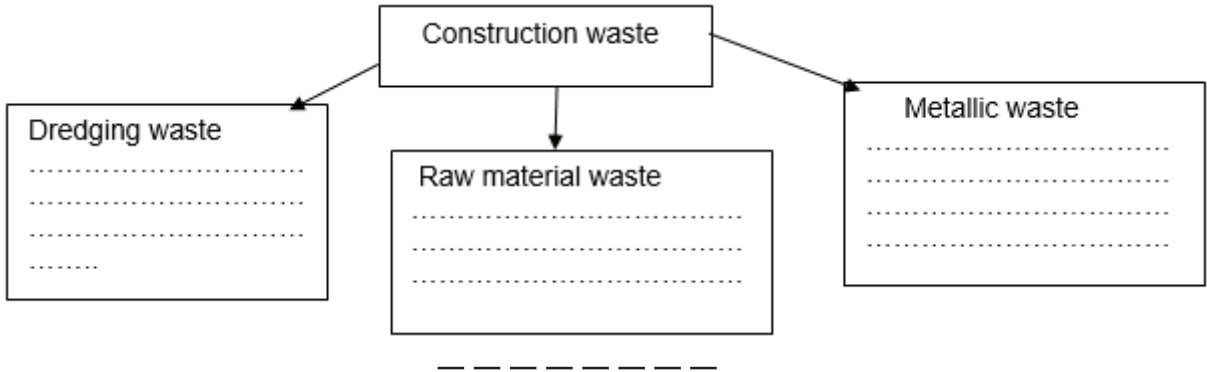
**Note:** Trainer will teach the trainee regarding the different classification of solid waste according to their properties using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Classification of solid waste according to their different properties**

- 1 Write down the classification of solid waste based on their different properties as listed in the chart given below.
- 2 Get it checked with the trainer.





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**Demonstration of collection methods of solid waste**

**Objectives:** At the end of this exercise you shall be able to  
 • **demonstrate the different collection methods of solid waste.**

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD Projector	- 1 No.

**Note: Trainer will teach the trainee regarding the various collection systems of solid waste using PPT and pictorial charts.**

**PROCEDURE**

**TASK 1: Demonstration of collection systems followed for solid waste management**

- 1 Demonstrate the different ways of collection methods used for solid waste management as per the points listed below.
- 2 Get it checked with the trainer.

<b>Collection systems</b>	<b>Demonstrate</b>
a House -House	
b Community bins	
c Curbside pick-up	
d Self delivered	

**Prepare a plan chart of solid waste management in a city**

**Objectives:** At the end of this exercise you shall be able to  
 • **prepare a plan chart of solid waste management in a city.**

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD Projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the solid waste management in a city using suitable demonstrations and PPT.

**PROCEDURE**

**TASK 1: Preparation of a chart of solid waste management in a city**

- 1 Prepare a plan chart of solid waste management in a city for the given Table 1.
- 2 Get it checked with the trainer

**Table 1**

<b>Sl.No</b>	<b>Solid waste management techniques</b>	<b>Interpretation of the technique</b>
1	At source reduction and reuse	
2	Recycling	
3	Composting	
4	Waste to Energy	
5	Landfills	

-----

### Prepare a pie chart composition of MSW

**Objectives:** At the end of this exercise you shall be able to

- prepare a pie chart composition of Municipal Solid Waste.

#### Requirements

##### Tools/Instruments

- Computer with internet - as reqd.
- Pencil & pen - as reqd.
- A4 sheet - as reqd.
- LCD Projector - 1 No.

**Note:** Trainer will teach the trainee regarding the different composition of municipal solid waste techniques using PPT and pictorial charts.

### PROCEDURE

#### TASK 1: Preparation of pie-chart showing the composition of Municipal solid waste

- 1 Develop a pie-chart demonstrating the composition of Municipal solid waste for the provided data in Table 1.
- 2 Get it checked with the trainer.

Table 1

Sl.No	Source of waste	% distribution
1	Food waste	15.2
2	Paper	25.0
3	Glass	4.2
4	Metals	9.4
5	Plastic	13.2
6	Rubber, Leather and Textiles	9.7
7	Wood	6.7
8	Yard trimmings	13.1
9	Others	3.5

**Explain the disposal methods of solid waste in sanitary methods**

**Objectives:** At the end of this exercise you shall be able to

- sketch the various steps followed in the disposal methods of solid waste in sanitary methods
- demonstrate the various methods of solid waste in sanitary methods.

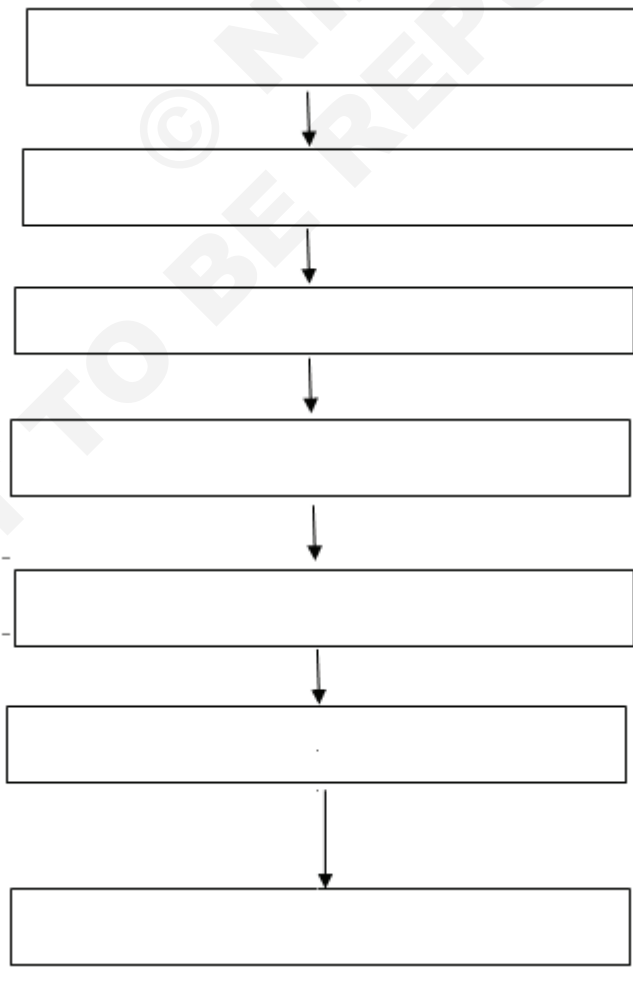
<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD Projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the various disposal methods of solid waste in sanitary methods using PPT and pictorial charts.

**PROCEDURE**

**TASK 1: Demonstration of various steps followed in the disposal techniques of solid waste in sanitary methods**

- 1 Demonstrate the flowchart of steps followed in the disposal of solid waste management in sanitary technique.
- 2 Get it checked with the trainer.



**TASK 2: Explanation of various disposal methods of solid waste in sanitary methods**

- 1 Demonstrate the significance, advantages and constraints various disposal methods of solid waste in sanitary methods as listed in the Table 1.
- 2 Get it checked with the trainer.

**Table 1**

Sl.No	Method of solid waste disposal	Significance	Advantages	Constraints
1	Solid waste open burning			
2	Sea dumping process			
3	Solid waste sanitary landfills			
4	Incineration method			
5	Composting process			
6	Disposal by ploughing into the fields			
7	Disposal by hod feeding			
8	Salvaging procedure			
9	Fermentation or Biological digestion			



**Illustrate the bad effects of solid waste disposal in a chart**

**Objectives:** At the end of this exercise you shall be able to

- sketch the different bad effects of solid waste disposal in a chart.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD Projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the different bad effects of solid waste disposal using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Illustration of bad effects of solid waste disposal**

- 1 Sketch the various causes, effects and solutions of solid waste disposal as per the given table-1 below.
- 2 Get it checked with the trainer.

**Table 1**

SI.No	Causes	Bad effects	Solutions
1	Municipal solid waste		
2	Biomedical waste		
3	Agricultural waste		
4	Construction waste		
5	E-waste		

**Compare the different methods of collection and transportation of solid waste with diagrams**

**Objectives:** At the end of this exercise you shall be able to

- compare the different methods of collection and transportation of solid waste using diagrams.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
<ul style="list-style-type: none"> <li>• Computer with internet</li> <li>• Pencil &amp; pen</li> <li>• A4 sheet</li> <li>• LCD Projector</li> </ul>	<ul style="list-style-type: none"> <li>- as reqd.</li> <li>- as reqd.</li> <li>- as reqd.</li> <li>- 1 No.</li> </ul>

**Note:** Trainer will teach trainee regarding the different methods of collection and transportation of solid waste using PPT and suitable demonstrations.





**PROCEDURE**

**TASK 1: Comparison of different methods of collection and transportation of solid waste using diagrams**

- 1 Identify the type of collection method and transportation model and the usage of the method for solid waste disposal as per the given diagrams under Table 1.
- 2 Get it checked with the trainer.

Table 1

Sl.No	Solid waste disposal diagrams	Type of collection and method of transportation	Application/Usage of the method
1			
2			
3			

Sl.No	Solid waste disposal diagrams	Type of collection and method of transportation	Application/Usage of the method
4			
5			
6			
7			

**Visit disposal site**

**Objectives:** At the end of this exercise you shall be able to

- visit disposal site namely sanitary landfills, composting, incineration and biogas plant
- interpret the features and demonstrate the same
- prepare an individual report.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD Projector	- 1 No.
• Pencil & pen	- as reqd.	• Sanitary plant	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will take the trainee to nearby disposal site and instruct the trainee to observe the different techniques followed in each disposal site process using suitable demonstrations and pictorial charts.

**PROCEDURE**

**Field Visit**

- 1 Find out a disposal site nearby and arrange the trainees for a common visit to the site on a particular week-day.
- 2 Instruct them to observe the different disposal techniques followed in each site namely sanitary landfills, composting, incineration and biogas plant as per the points noted below.

**Project Idea**

**Step 1:** Ask the trainee to prepare a report based on their interpretation,

**Step 2:** Instruct the trainee to demonstrate the same.

**Step 3:** Evaluate the report according to the rubrics.

**Observations to be noted at each site**

- 1 Evaluation of site based on its site capacity and geological characteristics,
- 2 Advantages of site selection with respect to acquisition and isolation from built-up areas,
- 3 Investigation on the possibility of water pollution,
- 4 Detailed engineering plant operation, planning and control
- 5 Periodic Maintenance procedures of the particular plant

## Techniques of segregation, packaging, storage, transport of infectious waste

**Objectives:** At the end of this exercise you shall be able to

- identify the methods of disposal of bio-medical waste and their segregation
- identify the suitable containers, waste category and treatment options with reference to color coding
- identify the labels for biomedical waste containers
- demonstrate the steps and precautions to be taken during transport.

### Requirements

#### Tools/Instruments

- |                          |            |
|--------------------------|------------|
| • Computer with internet | - as reqd. |
| • Pencil & pen           | - as reqd. |
| • A4 sheet               | - as reqd. |
| • LCD Projector          | - 1 No.    |

**Note:** Trainer will teach the trainee regarding the techniques of biomedical waste management using PPT and suitable demonstrations.

### PROCEDURE

#### TASK 1: Identification of the disposal methods of bio-medical waste and their segregation

- 1 Write down the types of biomedical waste and treatment and disposal methods with respect to the waste category as given in below Table 1.
- 2 Get it checked with the trainer

Table 1

Sl.No	Waste category	Type of waste	Treatment and disposal method
1	Category No 1		
2	Category No 2		
3	Category No 3		
4	Category No 4		
5	Category No 5		

SI.No	Waste category	Type of waste	Treatment and disposal method
6	Category No 6		
7	Category No 7		
8	Category No 8		
9	Category No 9		
10	Category No 10		

**TASK 2: Identify the suitable containers, waste category and treatment options with reference to color coding**

- 1 Write down the type of containers used, waste category and treatment options for different color coding as listed in Table 2.
- 2 Get it checked with the trainer.

**Table 2**



SI.No	Color coding	Type of containers	Waste category	Treatment options
1				
2				

SI.No	Color coding	Type of containers	Waste category	Treatment options
3				
4				

**TASK 3: Identification of the labels for biomedical waste containers and bags**

- 1 Write down the labels for biomedical waste containers for the given symbol as per the Table 3 given below.
- 2 Get it checked with the trainer.

**Table 3**

SI.No	Labels	Type of hazards
1		
2		

**TASK 4: Demonstration of steps and precautions to be taken during transport**

- 1 Write down the steps and precautions to be taken care during transport as per the given Table 4 given below
- 2 Get it checked with the trainer.

**Table 4**

SI.No	Steps involved	Precautions
1		
2		
3		
4		
5		

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Techniques of Bio-medical waste management

Objectives: At the end of this exercise you shall be able to

- identify the steps involved in biomedical waste management
- identify the various disposal method for the given waste category
- demonstrate the suitability of the waste for the given biomedical waste management.

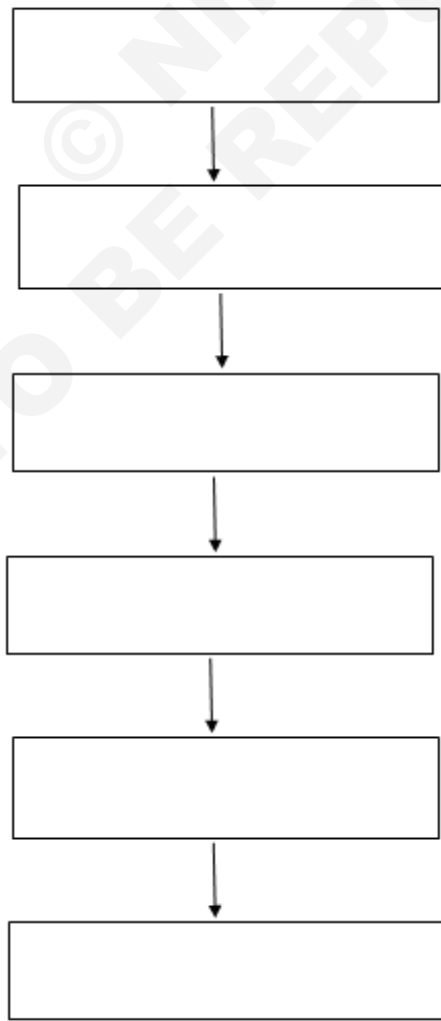
<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD Projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the techniques of biomedical waste management using PPT and suitable demonstrations.

PROCEDURE

TASK 1: Identification of the steps involved in biomedical waste management

- 1 Sketch a flowchart for the steps involved in biomedical waste management.
- 2 Get it checked with the trainer.



**TASK 2: Identification of the various disposal method for the given waste category**

- 1 Write down the various disposal method for the given waste category as per the Table 1 given below
- 2 Get it checked with the trainer.

**Table 1**

SI.No	Waste category	Disposal method
1	Plastic wastes after disinfection and shredding	
2	Disinfected sharps (except syringes)	
	If encapsulated	
	If non-encapsulated	
3	Incineration ash	
4	Other treated solid waste	
5	Oil and grease	
6	Treated waste water	

**TASK 3: Demonstration of the techniques used for biomedical waste management**

- 1 Demonstrate the suitability of the waste for the given biomedical waste management for the given Table 2.
- 2 Get it checked with the trainer.

**Table 2**

SI.No	Techniques	Suitability of the waste
1	Incineration	
2	Autoclave	
3	Microwave radiation	
4	Chemical methods	
5	Plasma pyrolysis	
6	Deep burial	

**Treatment method: Autoclave, Hydro-clave, Microwave, Chemical Disinfection, Solidification and Stabilization, Bioremediation**

**Objectives:** At the end of this exercise you shall be able to

- identify the different treatment methods for biomedical waste management
- demonstrate the significance, advantages and disadvantages of treatment methods
- demonstrate the precautions to be taken care during treatment process.

**Requirements**

**Tools/Instruments**

- Computer with internet - as reqd.
- Pencil & pen - as reqd.
- A4 sheet - as reqd.
- LCD Projector - 1 No.

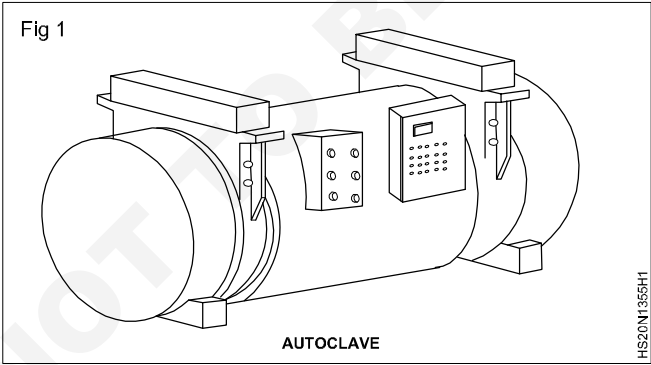
**Note:** Trainer will teach the trainee regarding the treatment method: Autoclave, Hydro-clave, Microwave, Chemical Disinfection, Solidification and Stabilization, Bioremediation using PPT and suitable pictorial diagrams.

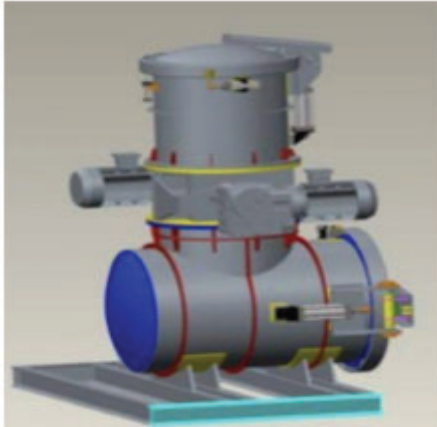
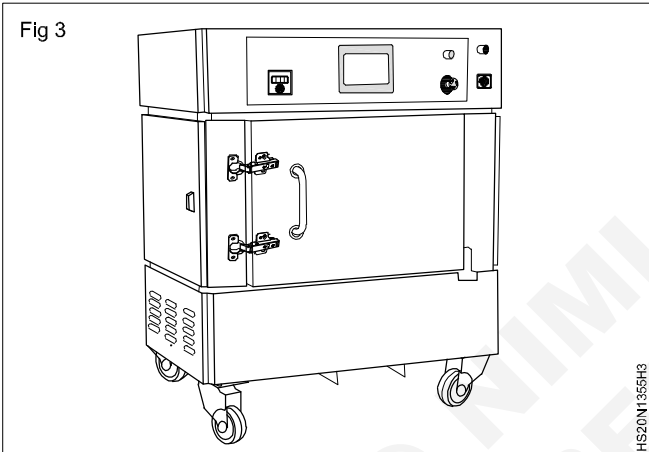
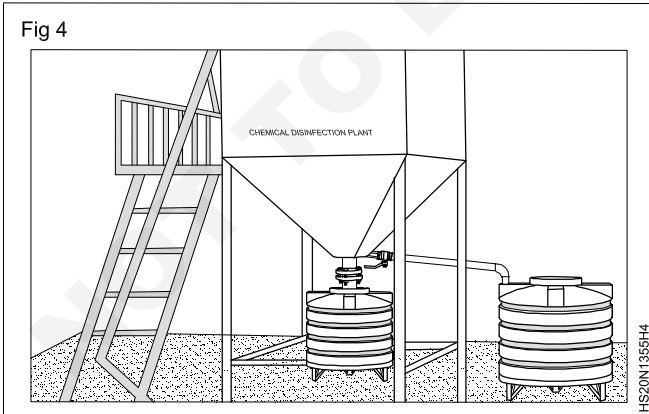
**PROCEDURE**

**TASK 1: Identification of the different treatment methods for biomedical waste management**

- 1 Write down the treatment methods for the given images below represented in Table 1.
- 2 Get it checked with the trainer.

**Table 1**

SI.No	Images	Treatment Method
1		

SI.No	Images	Treatment Method
2		
3	<p>Fig 3</p>  <p style="writing-mode: vertical-rl; transform: rotate(180deg);">HS20N1355H3</p>	
4	<p>Fig 4</p>  <p>CHEMICAL DISINFECTION PLANT</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">HS20N1355H4</p>	

**TASK 2: Demonstrate the significance, advantages and disadvantages of treatment methods**

- 1 Write down the significance, advantages and disadvantages of different biomedical waste treatment methods as given under Table 2.
- 2 Get it checked with the trainer.

**Table 2**

SI.No	Treatment methods	Significance	Advantages	Disadvantages
1	Auto-clave			
2	Hydro-clave			
3	Microwave			
4	Chemical disinfection			
5	Solidification and Stabilization			
6	Bio-remediation			

-----

**TASK 3: Demonstration of the precautions to be taken care during treatment process**

- 1 List down the necessary precautions and personal protective equipment's to be taken care during bio-waste management treatment process.      2 Get it checked with the trainer.
-

**Accumulation and storage of hazardous waste**

**Objectives:** At the end of this exercise you shall be able to

- identify the sources of hazardous waste
- demonstrate guidelines to store the hazardous waste
- identify the type of waste, color and type of containers used for different waste category.

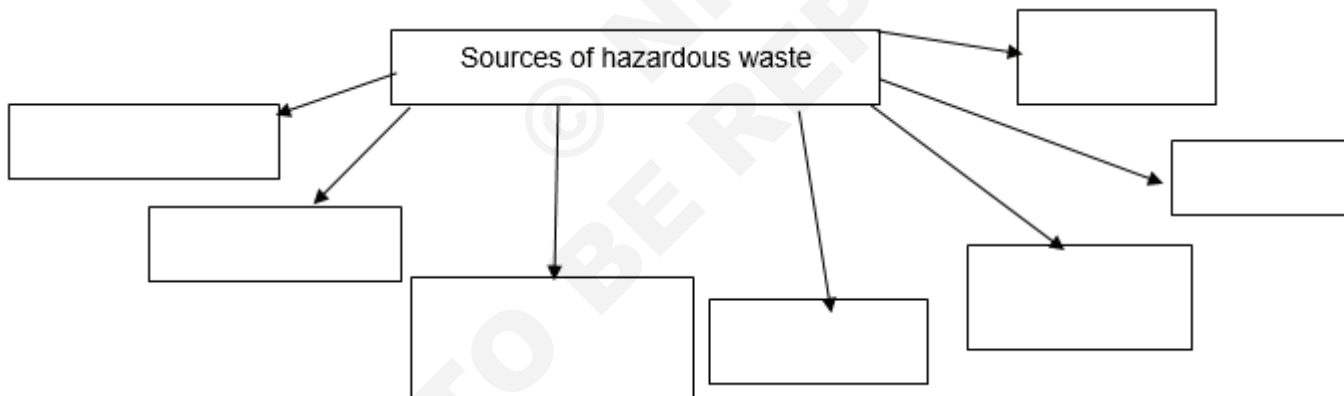
<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD Projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the accumulation and storage of hazardous waste using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Identification of the sources of hazardous waste**

- 1 Write down the sources of hazardous waste for the given flow diagram.
- 2 Get it checked with the trainer.



**TASK 2: Demonstration of guidelines for storage of hazardous waste**

- 1 List down the necessary precautions and safety measures to be taken care to store bio-medical hazardous waste.
- 2 Get it checked with the trainer.

**TASK 3: Identification of the type of waste, color and type of containers used for different waste category**

1. Identify the type of waste, color and type of containers used for different waste category as listed under the Table 1.
2. Get it checked with the trainer.

**Table 1**

SI.No	Waste Category	Types of waste	Color and type of container
1	Yellow		
2	Red		
3	White		
4	Blue		

**Land disposal of hazardous waste**

**Objectives:** At the end of this exercise you shall be able to

- demonstrate the applicability and limitations of land disposal of hazardous waste
- sketch the schematic diagrams of sharp pit and mark its parts for identification
- sketch the schematic diagrams of deep burial pit and mark its parts for identification.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• Chart paper	- 2 Nos.
• Pencil & pen	- as reqd.	• LCD Projector	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainee regarding the land disposal of hazardous waste using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Demonstration of the suitability and limitations of land disposal of hazardous waste**

- 1 List down the suitability and limitations of land disposal of hazardous waste for various types of disposal methods as given in Table 1.
- 2 Get it checked with the trainer.

**Table 1**

SI.No	Disposal methods	Applicability	Limitations
1	Landfills		
2	Surface impediment		
3	Underground injection wells		
4	Land forming		

**TASK 2: Schematic representation of sharp pit and mark its parts for identification**

- 1 Sketch the schematic diagram of sharp pit and mark its parts for identification using a chart paper.
- 2 Get it checked with the trainer.

**TASK 3: Schematic representation of deep burial pit and mark its parts for identification**

- 1 Sketch the schematic diagram of deep burial pit and mark its parts for identification using a chart paper.
- 2 Get it checked with the trainer.



## Demonstration of humidity and temperature

**Objectives:** At the end of this exercise you shall be able to

- describe the range of pollutant concentrations indicating season trends
- sketch a monthly temperature variation based on the different season
- sketch a monthly humidity variation based on the different season.

### Requirements

#### Tools/Instruments

- Computer with internet - as reqd.
- Pencil & pen - as reqd.
- A4 sheet - as reqd.
- LCD projector - as reqd.

**Note:** Trainer will teach the trainee regarding the influence of humidity and temperature on air pollution using PPT and suitable demonstrations.

## PROCEDURE

### TASK 1: Range of pollutant concentrations indicating season wise trend

- 1 Write the minimum and maximum pollutant concentrations based on the season and type of pollutants as given in the Table 1.
- 2 Get it checked with the trainer.

Table 1

Sl.No	Pollutants	Continuous monitoring station	Pre-monsoon season		Monsoon		Post monsoon season		Summer season	
			Min $\mu\text{g}/\text{Nm}^3$	Max $\mu\text{g}/\text{Nm}^3$	Min $\mu\text{g}/\text{Nm}^3$	Max $\mu\text{g}/\text{Nm}^3$	Min $\mu\text{g}/\text{Nm}^3$	Max $\mu\text{g}/\text{Nm}^3$	Min $\mu\text{g}/\text{Nm}^3$	Max $\mu\text{g}/\text{Nm}^3$
1	SO <sub>2</sub>	At your location								
2	NO <sub>2</sub>	At your location								
3	Respiratory solid particulate matter	At your location								
4	Solid particulate matter	At your location								

**TASK 2: Sketch a monthly temperature variation based on the different season**

- 1 Draw a graph between monthly temperature variation with respect to various season namely pre-monsoon, monsoon, post-monsoon and summer season for the given maximum and minimum temperature ranges given in the Table 2.
- 2 Get it checked with the trainer.

**Table 2**

SI.No	Seasonal change	Temperature range	
		Min Degree C	Max Degree C
1	Pre-monsoon	25.2	36.2
2	Monsoon	21	33.2
3	Post-monsoon	21	33.4
4	Summer season	25.2	36.2

**TASK 3: Sketch a monthly humidity variation based on the different season**

- 1 Draw a graph between monthly humidity variation with respect to various season namely pre-monsoon, monsoon, post-monsoon and summer season for the given maximum and minimum monthly average pollutant concentrations given in the Table 3.
- 2 Get it checked with the trainer.

**Table 3**

SI.No	Seasonal change	Relative Humidity	
		Min %	Max %
1	Pre-monsoon	54	88
2	Monsoon	79	96
3	Post-monsoon	64	98
4	Summer season	44	89

**Point sources of air pollution**

**Objectives:** At the end of this exercise you shall be able to

- sketch a pie chart for the given sources of air pollution
- demonstrate some of natural and man-made sources of air pollution
- demonstrate the sources, effects and solution for control air pollution.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• Chart paper	- 2 Nos.
• Pencil & pen	- as reqd.	• LCD Projector	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainee regarding the various point sources of air pollution using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Sketch a pie chart for the given sources of air pollution**

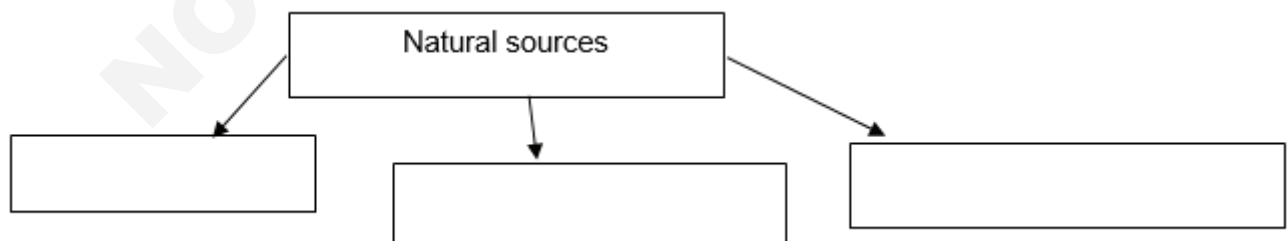
- 1 Draw a pie chart for the given data listed under Table 1.
- 2 Get it checked with the trainer.

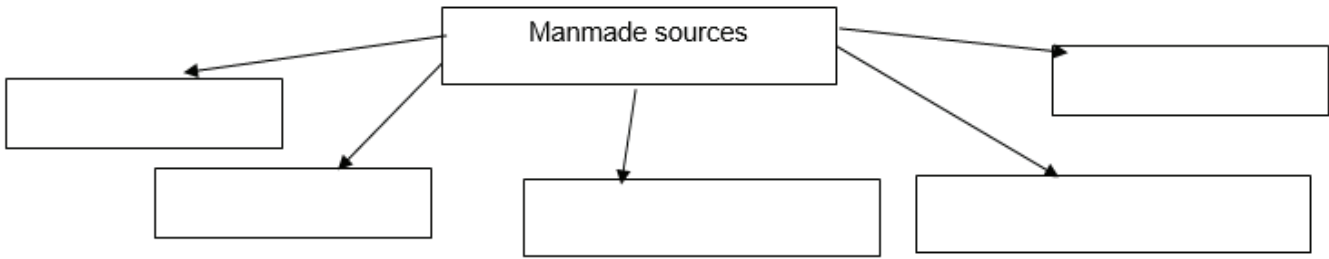
**Table 1**

SI.No	Sources	Percentage
1	Dust and construction	45%
2	Waste burning	17%
3	Transport	14%
4	Diesel generator	9%
5	Industries	8%
6	Domestic cooking	7%

**TASK 2: Demonstration of some of natural and manmade sources of air pollution**

- 1 Write down the natural and manmade sources of air pollution for the given flowchart.
- 2 Get it checked with the trainer.





**TASK 3: Demonstration of the sources, effects and solution for control air pollution**

- 1 Demonstrate the various sources, effects and solutions to control air pollution under the given Table 2.
- 2 Get it checked with the trainer.

**Table 3**

Sl.No	Sources	Effects	Solutions
1			
2			
3			
4			
5			

**Prepare charts or posters for global warming**

**Objectives:** At the end of this exercise you shall be able to

- draw a suitable diagram for global warming.

**Requirements****Tools/Instruments**

- |                          |            |                 |          |
|--------------------------|------------|-----------------|----------|
| • Computer with internet | - as reqd. | • Chart paper   | - 2 Nos. |
| • Pencil & pen           | - as reqd. | • LCD Projector | - 1 No.  |
| • A4 sheet               | - as reqd. |                 |          |

**Note:** Trainer will teach the trainee regarding the concepts related to global warming using PPT and suitable demonstrations.

**PROCEDURE****TASK 1: Sketch a suitable diagram for global warming**

- 1 Draw a suitable diagram describing global warming individually using the given chart paper.
- 2 Get it checked with the trainer.

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## Health Sanitary Inspector - Waste &amp; Air and Noise Pollution

## Prepare poster on prevention techniques for air pollution

**Objectives:** At the end of this exercise you shall be able to

- prepare and sketch a suitable diagram related to the various prevention techniques of air pollution.

Requirements			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• Chart paper	- 2 Nos.
• Pencil & pen	- as reqd.	• LCD Projector	- 1 No.
• A4 sheet	- as reqd.		



**Note:** Trainer will teach the trainee regarding the prevention techniques of air pollution using PPT and suitable demonstrations.

## PROCEDURE

## TASK 1: Preparation of poster for preventing air pollution

- 1 Prepare the poster on the headings given below and sketch a suitable diagram demonstrating the same.
- 2 Get it checked with the trainer.

**Poster Headings**

- 1 Planting more trees.
- 2 Using environmental friendly vehicles.
- 3 Using public transport.
- 4 Using alternate sources of energy.
- 5 Stop open burning.

**Demonstration of an AC plant for thermal comfort**

**Objectives:** At the end of this exercise you shall be able to

- **identify the factors influencing outdoor and indoor AC conditions**
- **suggest optimum and recommended operative AC temperature for comfort**
- **demonstration of outdoor design AC conditions for winter.**

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• Chart paper	- 2 Nos.
• Pencil & pen	- as reqd.	• LCD Projector	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainee regarding the usage of an AC plant for thermal comfort using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Identify the factors influencing outdoor and indoor AC conditions**

- 1 Write down the factors affecting the outdoor and indoor AC conditions for the given Table 1.
  - 2 Get it checked with the trainer.

**Table 1**

<b>S.No</b>	<b>Factors affecting indoor conditions</b>	<b>Factors affecting indoor conditions</b>
1		
2		
3		
4		
5		
6		

**TASK 2: Demonstration of optimum and recommended operative AC temperature for comfort**

- 1 Write down the optimum and recommended temperature range for comfort for summer and winter season as given under Table 2.
  - 2 Get it checked with the trainer.

**Table 2**

<b>Season</b>	<b>Temperature (optimum range)</b>	<b>Temperature (recommended range for 90% acceptance)</b>
Winter		
Summer		

**TASK 3: Demonstration of outdoor design AC conditions for summer season**

- 1 Write down the recommended summer design conditions for an AC plant for major Indian cities as listed under Table 3.
- 2 Get it checked with the trainer.

**Table 3**

S.No	City	0.4% value		1.0% value		2.0% value		Daily range	
		DB	MWB	DB	MWB	DB	MWB	DB	MWB
1	Ahmedabad								
2	Bengaluru								
3	Mumbai								
4	Kolkata								
5	Hyderabad								
6	Jaipur								
7	Chennai								
8	Nagpur								
9	New Delhi								
10	Trivandrum								

DB - Dry bulb temperature

MWB-Maximum wet bulb temperature



**Point out types of ventilation**

**Objectives:** At the end of this exercise you shall be able to

- identify the different types of ventilation
- compare the different types of ventilation
- demonstrate the ventilation type for the given diagrams.

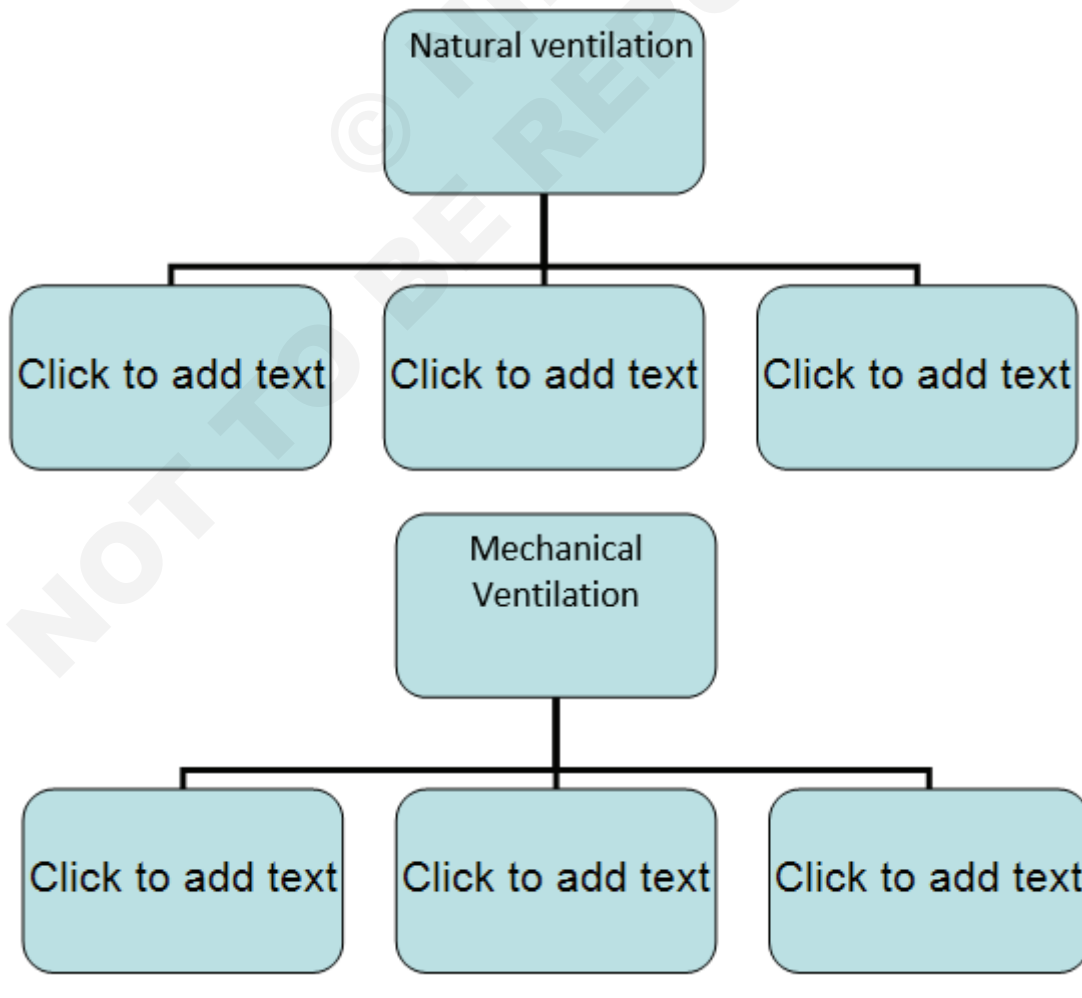
<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD Projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the different types of air ventilation using PPT and suitable demonstrations .

**PROCEDURE**

**TASK 1: Identify the types of ventilation**

- 1 Write down the different types of ventilation with respect to the sources mentioned below in the flowchart.
- 2 Get it checked with the trainer.



**TASK 2: Compare the different types of ventilation**

- 1 Compare the natural and mechanical ventilation types as listed under Table 1
- 2 Get it checked with the trainer.

**Table 1**

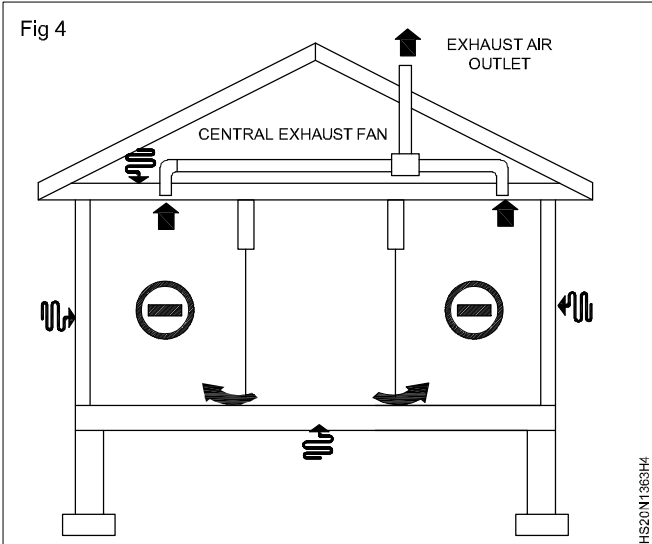
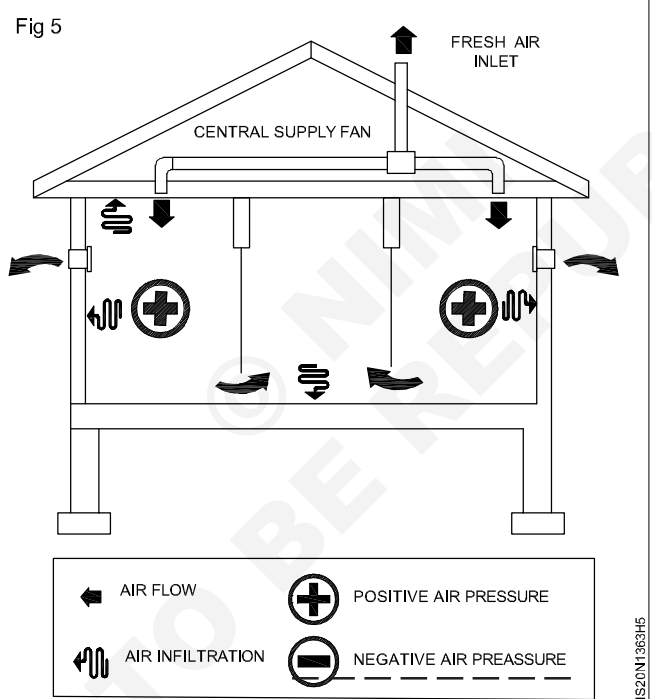
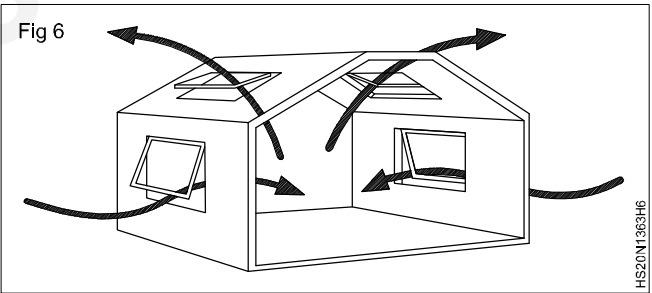
SI.No	Natural	Mechanical
1		
2		
3		
4		
5		

**TASK 3: Demonstration of the ventilation type for the given diagrams**

- 1 Write down the right type of ventilation for the given diagrams listed in Table 2.
- 2 Get it checked with the trainer.

**Table 2**

SI.No	Images	Type of ventilation
1	<p>Fig 1</p> <p>HS20N1352H1</p>	
2	<p>Fig 2</p> <p>HS20N1353H2</p>	
3	<p>Fig 3</p> <p>ROOM AIR EXHAUST DUCTS</p> <p>EXHAUST AIR OUTLET</p> <p>EXHAUST FAN</p> <p>SUPPLY FAN</p> <p>FRESH AIR INLET</p> <p>         ← AIR FLOW      ⊕ POSITIVE AIR PRESSURE          ↻ AIR INFILTRATION      ⊖ NEGATIVE AIR PRESSURE     </p> <p>HS20N1353H3</p>	

SI.No	Images	Type of ventilation
4	<p>Fig 4</p>  <p style="text-align: right;">HS20N1363H4</p>	
5	<p>Fig 5</p>  <p style="text-align: right;">HS20N1363H5</p>	
6	<p>Fig 6</p>  <p style="text-align: right;">HS20N1363H6</p>	

## Measurement of noise pollution

**Objectives:** At the end of this exercise you shall be able to

- identify the noise level for various kind of events
- illustrate a vector noise decibel scale chart
- demonstrate guidelines for instrument selection for measuring noise level.

### Requirements

#### Tools/Instruments

- Computer with internet - as reqd.
- Pencil & pen - as reqd.
- A4 sheet - as reqd.
- LCD Projector - 1 No.

**Note:** Trainer will teach the trainee regarding the accumulation and storage of hazardous waste using PPT and suitable demonstrations.

## PROCEDURE

### TASK 1: Identification of the noise level for various kind of events

- 1 Write down the noise level for various kind of events as listed in the Table 1.
- 2 Get it checked with the trainer.

Table 1

Sl.No	Events	Noise level
1	Thunder	
2	Volcano eruption	
3	Jet plane	
4	Factory boiler	
5	Car and bike	
6	Public address systems	
7	Whispering	
8	Breathing	
9	Loud conversation	
10	Regular radio sound	

### TASK 2: Illustrate a noise decibel vector scale diagram

- 1 Draw a decibel scale chart vector illustration measuring noise pollution as per the parameters given in the Table 2.
- 2 Get it checked with the trainer.

**Table 2**

SI.No	Decibel level	Instrument
1	140 db	Fire workd
2	130 db	Jet engine
3	120 db	Siren
4	100 db	Helicopter
5	90 db	Hair dryer
6	80 db	Truck
7	70 db	Car
8	60 db	Conversation
9	50 db	Refrigerator
10	40 db	Rain
11	20 db	Whsiper
12	10 db	Breath

**TASK 3: Demonstration of guidelines for instrument selection for measuring noise level**

- 1 Write down the appropriate instruments and suggestions for measuring different noise level as per the given Table 3.
- 2 Get it checked with the trainer.

**Table 3**

SI.No	Type of measurements	Appropriate Instruments	Suggestions
1	Personal noise exposure		
2	Noise levels generated by a particular source		
3	Noise survey		
4	Impulse noise		

## Process to control noise pollution

**Objectives:** At the end of this exercise you shall be able to

- identify the sources of noise pollution, causes for the same
- suggest control measures to overcome the noise pollution
- suggest ambient air quality standards in respect of noise control.

### Requirements

#### Tools/Instruments

- Computer with internet - as reqd.
- Pencil & pen - as reqd.
- A4 sheet - as reqd.
- LCD Projector - 1 No.

**Note:** Trainer will teach the trainee regarding the various sources of noise pollution and the causes of the same and control measures to overcome the noise pollution using PPT and suitable demonstrations.

## PROCEDURE

### TASK 1: Identification of the various sources of noise pollution and causes for the same

- 1 Write down the causes of the noise pollution for the sources listed under Table 1.
- 2 Get it checked with the trainer.

Table 1

Sl.No	Sources of noise pollution	Causes for the occurrence
1	Industrialization	
2	Events	
3	Vehicles	
4	Construction sites	
5	Traffic	
6	Animals	
7	Neighborhood	

**TASK 2: Suggest control measures to overcome the noise pollution**

- 1 Write down the effective measures to nullify the effect of noise pollution on human health.
- 2 Get it checked with the trainer.

**Table 2**

SI.No	Effect of noise pollution on human health	Effective measures to control
1	Hypertension	
2	Hearing loss	
3	Sleeping disorders	
4	Cardiovascular issues	
5	Lack of concentration	
6	Risk to pregnant women	

**TASK 3: Suggest ambient air quality measures in respect of noise control**

- 1 Write down the noise limits for day and night time with respect to different zonal area and area codes as listed under Table 3.
- 2 Get it checked with the trainer.

**Table 3**

Area code	Category of Area/Zone	Limits in dB	
		Day time	Night time
A	Industrial area		
B	Commercial area		
C	Residential area		
D	Silence zone		

**Point out the sewage treatment plant**

**Objectives:** At the end of this exercise you shall be able to

- demonstrate the sources of waste water
- identify the type of treatment process
- sketch the flowchart of sewage treatment plant.

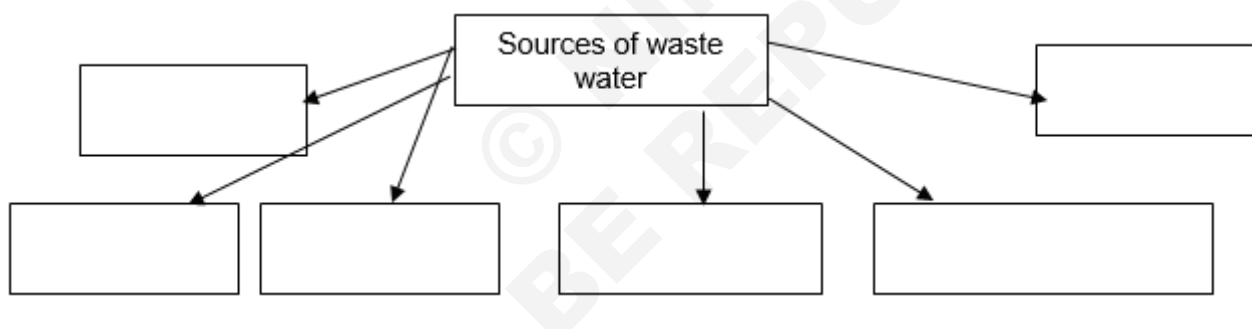
Requirements			
Tools/Instruments			
• Computer with internet	- as reqd.	• LCD projector	- 1 No.
• Pencil & pen	- as reqd.	• Waste disposal plant	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainee regarding the processes undergone in the sewage treatment plant using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Identification of sources of waste water**

- 1 Write down the different sources of waste water as per the given flow diagram
- 2 Get it checked with the trainer.



**TASK 2: Identification of types of sewage treatment process**

- 1 Write the types of treatment unit, name of the unit and types of impurities removed for the given treatment type as listed under Table 1.
- 2 Get it checked with the trainer.

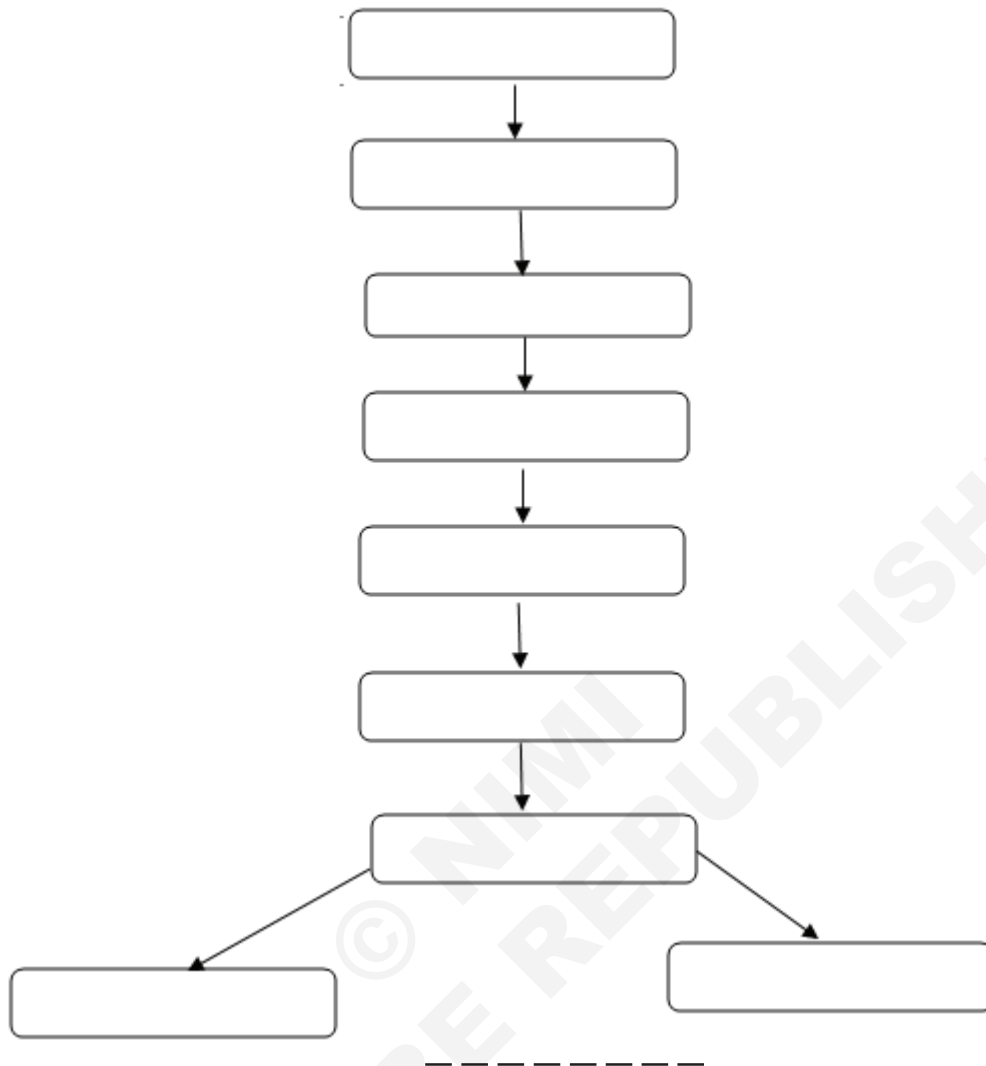
Table 1

Sl.No	Type of treatment	Type of treatment unit	Name of the unit	Type of impurities present
1	Physical treatment			
2	Chemical treatment			
3	Biological treatment			



**TASK 3: Flowchart of sewage treatment plant**

- 1 Sketch the steps involved in the process of sewage treatment plant as per the flow diagram given below.
- 2 Get it checked with the trainer.



**Inspection of flushing tank, manholes, etc.**

**Objectives:** At the end of this exercise you shall be able to

- identify the solutions for the problems faced during inspection of flushing tank
- visit the waste disposal plant and observe the inspection procedures for manholes and prepare a report for the same.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD projector	- 1 No.
• Pencil & pen	- as reqd.	• Waste disposal plant	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will take the trainee to waste disposal plant and ask the trainee to observe the inspection procedures to be adopted for flushing tank, manholes and sewer system using suitable demonstrations.

**PROCEDURE**

**TASK 1: Identification of solutions for the problems faced in the inspection of flushing tank**

- 1 Write down the solutions for the problems listed under Table 1 faced during the inspection of flushing tank.
- 2 Get it checked with the trainer.

**Table 1**

<b>Sl.No</b>	<b>Problems in flushing tank</b>	<b>Solutions</b>
1	Continuous water running	
2	External tank leak	
3	Water spilling into over flow tube	
4	Whistling sound	
5	Splashing sound	
6	Water on floor around toilet	
7	Tank flushing partially	

**TASK 2: Visit the waste disposal plant and observe the inspection procedures to be adopted for man-holes**

- 1 Following are the points to be observed during the inspection of man-holes.
- 2 Prepare a report for the same.

**Observations**

- a Check the area around the lid for proper drainage away from the lid. Use a straight edge to see if the man-hole is at proper elevation and grade with the surrounding ground
- b Check for combustible gases inside the manhole before removing the man-hole cover
- c Prior to entering the man-hole, verify that the atmosphere within is safe. Man-holes can be flushed prior to entry. Flushing will remove gases, slime and debris from the walls and clean ladder rungs for better inspection and footing. If a power jetter is available, chlorine can be added to the water supply
- d With a flash light or other adequate portable lighting, inspect all surfaces and joints inside the manhole for
  - 1 Cracks or breaks in man-hole walls and bottom
  - 2 Sources of infiltration
  - 3 Joint security

- 4 Offsets and mis-alignments
- 5 Root intrusion
- 6 Grease accumulation around the arch or inside of sewers
- 7 Gravel or debris in invert
- 8 Grout bed of frame and condition of frame seal
- 9 Condition of steps
- 10 Debris on shelf or steps
- 11 Sluggish flow or backed up waste-water
- 12 Separation of grade rings
- 13 Corrosion
- 14 Manhole section lifting holes that have not been plugged
- 15 Surcharge line
- 16 Wetness or condensation on walls that indicates that ground water level
- e Clean the ledge of the man-hole ring and inspect for cracks in the metal parts
- f Replace the lid and check for warped or misfit lid and rattling or rocking of lid

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**Demonstration of various traps, 'p' trap, 's' trap, 'q' trap, etc....**

**Objectives:** At the end of this exercise you shall be able to

- sketch the different traps according to its shapes and label the parts
- demonstrate the application of various traps.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the different type of traps and its application using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Sketch the different type of traps according to its shapes and label it**

- |   |                     |
|---|---------------------|
| 1 Sketch the different traps listed below and label the parts | c 'P' trap          |
| 2 Get it checked with the trainer                             | d Gully trap        |
|   | e Floor trap        |
|   | f Intercepting trap |
|   | g Bottle trap       |

**List of traps**

- a 'Q' Trap
- b 'S' trap

**TASK 2: Demonstration of the uses/applications of different type of traps**

- |  |                                    |
|--|------------------------------------|
| 1 Write down the application of different type of traps given under Table 1. | 2 Get it checked with the trainer. |
|--|------------------------------------|

**Table 1 Application of different type of traps**

<b>Sl.No</b>	<b>Type of trap</b>	<b>Uses/Applications</b>
1	'Q' trap	
2	'S' trap	
3	'P' trap	
4	Grease trap	
5	Gully trap	
6	Floor trap	
7	Intercepting trap	
8	Bottle trap	

## Demonstration of man-holes by Videos - Calls

**Objectives:** At the end of this exercise you shall be able to

- observe the man-hole preparation and execution of the system through videos
- demonstrate the same.

### Requirements

#### Tools/Instruments

- |                          |            |
|--------------------------|------------|
| • Computer with internet | - as reqd. |
| • Pencil & pen           | - as reqd. |
| • A4 sheet               | - as reqd. |
| • LCD projector          | - 1 No.    |

**Note:** Trainer will teach the trainee regarding the man-hole preparation, installation and execution of the system through videos links and ask the trainee to demonstrate the same.

### PROCEDURE

#### TASK 1: : Video demonstration of man-holes

- 1 Video Link 1: <https://youtu.be//YYgWJuavOc>
- 2 Video title: Abstract for quantities for Manhole

-----

#### TASK 2: Video demonstration of man-hole installation

- 1 Video link 1: <https://youtu.be//4hLyQENrR5g>
- 2 Video title: Man-hole installation

-----

**Demonstration of various plumbing tools like hacksaw, pipe cutter, pipe vice, wrench set of spanners etc....**

**Objectives:** At the end of this exercise you shall be able to

- list down the tools used for plumbing system
- sketch the various plumbing tools and label its parts
- demonstrate the applications of different plumbing tools .

Requirements			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD projector	- 1 No.
• Pencil & pen	- as reqd.	• Plumbing tool set	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainee regarding the usage of various types of plumbing tools and its application using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: List down the tools used for plumbing system**

- 1 Name the various tools used for plumbing under Table 1.
- 2 Get it checked with the trainer.

**Table 1 List of plumbing tools**

Sl.No	Name of the plumbing tools used
1	
2	
3	
4	
5	

**TASK 2: Sketch the various plumbing tools and label its parts**

- 1 Illustrate the various plumbing tools listed below and label its parts for identification.
  - b Pipe cutter
  - c Pipe vice
  - d Wrench
  - e Spanners
- 2 Get it checked with the trainer.

**List of Plumbing Tools**

- a Hack-saw blade

**TASK 3: Demonstration the application of different plumbing tools**

- 1 Write down the uses/application of different plumbing tools as listed in Table 2.
- 2 Get it checked with the trainer.

**Table 2 Application of plumbing tools**

<b>Sl.No</b>	<b>Name of the plumbing tools used</b>	<b>Uses/Applications</b>
1	Hack-saw blade	
2	Pipe cutter	
3	Pipe vice	
4	Wrench	
5	Spanners	

-----

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**Inspection and maintenance of sewage treatment plant**

**Objectives:** At the end of this exercise you shall be able to

- inspect the dissolved oxygen in aeration tank of sewage treatment plant
- observe the operating conditions of sewage treatment plant and demonstrate the same
- describe the sewage treatment plant maintenance services.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD projector	- 1 No.
• Pencil & pen	- as reqd.	• Waste disposal plant	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainee regarding the inspection and maintenance procedures of sewage treatment plant using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Inspection of Dissolved Oxygen in aeration tank**

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1 Follow the inspection procedure to check the dissolved oxygen content in aeration tank as demonstrated below.</li> <li>2 Get it checked with the trainer.</li> </ol> | <ol style="list-style-type: none"> <li>4 Gently take the tube and pour out about 2 ml.</li> <li>5 Add a few drops of manganous sulphate solution.</li> <li>6 Add a few drops of potassium iodide solution.</li> <li>7 Close the top with the thumb and invert a few times.</li> <li>8 Allow to stand for a few minutes.</li> <li>9 If there is a yellow precipitate, dissolved oxygen is present.</li> <li>10 If there is a white precipitate, there is no Dissolved oxygen.</li> </ol> |
|---|---|

**How to check Dissolved oxygen in aeration tank?**

- 1 Take a 10 ml well washed test tube.
- 2 Hold it gently against the weir overflow sideways.
- 3 Allow the sewage to fill the tube and overflow for a few minutes.

**TASK 2: Demonstration of the operating conditions of sewage treatment plant**

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1 Observe the following points related to operating conditions of sewage treatment plant and demonstrate the same.</li> <li>2 Get it checked with the trainer.</li> </ol> | <ol style="list-style-type: none"> <li>2 Equipment operating time.</li> <li>3 Waste generation ratios versus processed time.</li> <li>4 Electrical and cost ratios of the reagents to the treated volume.</li> <li>5 Tank retention time.</li> </ol> |
|--|--|

**Observations to be noted**

- 1 Productivity: Ratio between input and output for each input stream parameter.

**TASK 3: Maintenance services of sewage treatment plant**

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1 Describe the maintenance services of sewage treatment plant as per the various types listed below under Table 1.</li> </ol> | <ol style="list-style-type: none"> <li>2 Get it checked with the trainer.</li> </ol> |
|--|--|



**Table 1 Maintenance services of sewage treatment plant**

<b>Sl.No</b>	<b>Maintenance type</b>	<b>Description</b>
1	Preventive electromechanical maintenance	
2	Predictable electromechanical support	
3	Corrective electromechanical maintenance	
4	Specialized support and regulatory compliance	

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**Identity various equipment of sewage disposal**

**Objectives:** At the end of this exercise you shall be able to

- identify the type of equipment used in sewage disposal
- demonstrate the applications of the various equipment used in sewage disposal.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• Waste disposal plant	- 1 No.
• Pencil & pen	- as reqd.	• Sewage system and treatment plant	- 1 No.
• A4 sheet	- as reqd.		
• LCD projector	- 1 No.		



**Note:** Trainer will teach the trainee regarding the different types of equipment used in sewage disposal using PPT and suitable demonstrations.


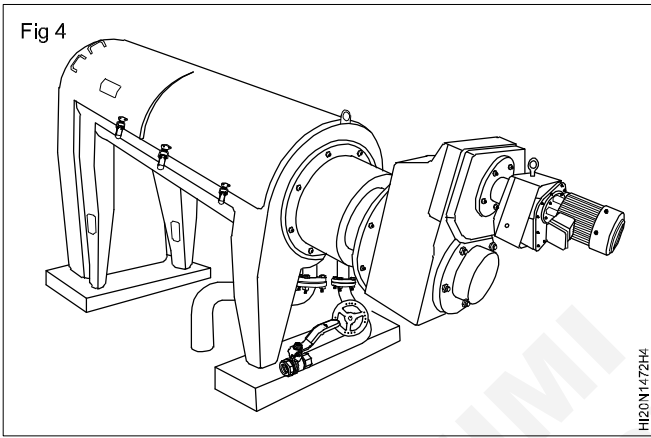
**PROCEDURE**

**TASK 1: Identification of the type of equipment used in sewage disposal**

- 1 Write down the name of the equipment used in sewage disposal for the given images listed under Table 1.
- 2 Get it checked with the trainer.

**Table 1**

<b>Sl.No</b>	<b>Images</b>	<b>Name of the equipment</b>
1		
2		

SI.No	Images	Name of the equipment
3		
4		

**TASK 2: Demonstration of the applications of the various equipment used in sewage disposal**

- 1 Write down the uses of the various equipment used in sewage disposal as listed under Table 2.
- 2 Get it checked with the water.

**Table 2 - Application of various equipment's used in sewage disposal**

SI.No	Equipment name	Uses/Application
1	Trash rakes	
2	Clarifier	
3	Filters	
4	Demineralizers	
5	Centrifuges	
6	Sludge dryers	

**Identify pollution of water from sewage**

**Objectives:** At the end of this exercise you shall be able to

- identify primary pollutants found in sewage and identify their sources
- identify the standard limits for sewage discharge as prescribed by Pollution Control Board.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD projector	- 1 No.
• Pencil & pen	- as reqd.	• Sewage system and treatment plant	- 1 No.
• A4 sheet	- as reqd.	• Waste disposal plant	- 1 No.

**Note:** Trainer will teach the trainee regarding the various pollutants found in sewage water using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Identification of primary pollutants found in sewage and identify their sources**

- 1 Name the sources of primary pollutants with respect to the type of pollutant listed in Table 1.
- 2 Get it checked with the trainer.

**Table 1 Sources of primary pollutants found in sewage**

SI.No	Pollutant	Sources
1	Heavy metals	
2	Pesticides	
3	Dioxins	
4	PCBs	
5	Nitrates and Phosphates	

**TASK 2: Identification of acceptable limits for sewage discharge as suggested by PCB**

- 1 Identify the acceptable limits for sewage discharge with respect to the different waste water characteristics listed under Table 2.
- 2 Get it checked with the trainer.

**Table 2 Standard limits for sewage discharge**

SI.No	Waste water characteristics	Acceptable limits/Norms prescribed by PCB
1	pH	
2	Total dissolved solids mg/l	
3	Total suspended solids mg/l	
4	Biological oxygen demand mg/l	
5	Chemical oxygen demand mg/l	
6	Chlorides mg/l	
7	Sulphates mg/l	

**Visit the burial ground, proper process of disposal of dead bodies and maintenance of records as per legal provisions**

**Objectives:** At the end of this exercise you shall be able to

- visit the burial ground and review the risk assessment criteria
- visual inspection and problems to look at the burial ground and prepare a report
- visual inspection and observing the guidelines for burial of a deceased human being
- identify the legal procedures and the responsibility of different authorities for dead body disposal.

Requirements		
<b>Tools/Instruments</b>		
<ul style="list-style-type: none"> <li>• Computer with internet</li> <li>• Pencil &amp; pen</li> <li>• A4 sheet</li> </ul>	<ul style="list-style-type: none"> <li>- as reqd.</li> <li>- as reqd.</li> <li>- as reqd.</li> </ul>	<ul style="list-style-type: none"> <li>• LCD projector - 1 No.</li> </ul>

**Note:** Trainer will take the trainee to the nearby burial ground and ask them to observe the process of disposal of dead bodies and maintenance of records as per legal provision using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Visit the burial ground and review the risk assessment criteria**

- 1 Trainees are advised to visit the nearby burial ground and ask the trainees to review the risk assessment approaches as suggested below.
- 2 Get it checked with the trainer.

**Step 3:** Evaluate the risk of a memorial falling and harming someone, and decide on the precautions needed to control the risk.

**Step 4:** Record the significant findings of the risk assessment and take steps to implement the precautions needed.

**Step 5:** Review the risk assessment periodically to see if anything has changed and update it if necessary.

**Simple five steps approach for risk assessment**

**Step 1:** Identify the hazard , e.g., potentially unstable memorial.

**Step 2:** Identify who might be harmed and how? -these might be employees, contractors, volunteers or visiting members of the public who may be struck by a falling memorial.

**TASK 2: Visual inspection and problems to look at the burial ground and prepare a report**

- 1 Visit the burial ground and visually inspect the following problems in the spot demonstrated below and prepare a detailed report.
- 2 Get it checked with the trainer.

- Kerb stones breaking apart.
- Undermined or unstable foundations.
- Learning memorials -particular if there is evidence of recent movement.
- Evidence of structural damage or disturbance(e.g. cracks).
- The presence of vegetation, which may cause cracks etc. to widen.

**Problems to observe by the trainees**

- Damaged or eroding bonding.
- Movement of parts of a memorial from its original position.

### TASK 3: Visual inspection and observing the guidelines for burial of a deceased human being

- 1 Trainees need to visit the burial ground to observe the following guidelines suggested for burial of a deceased human being and prepare a detailed report.
- 2 Get it checked with the trainer.

#### Observations to be noted

**Step 1:** Ensure for the formal agreement of the family before starting the burial.

**Step 2:** Prior to departure: Team composition and preparation of disinfectants.

**Step 3:** Assemble all necessary equipment.

**Step 4:** Arrival at deceased patient home: prepare burial with family and evaluate risks.

**Step 5:** Placement of the body in the body bag.

**Step 6:** Placement of the body bag in a coffin where culturally appropriate.

**Step 7:** Sanitize family's environment.

**Step 8:** Remove PPE, manage waste and perform hand hygiene.

**Step 9:** Transport the coffin or the body bag to the cemetery.

**Step 10:** Burial at the cemetery: place coffin or body bag into the grave.

**Step 11:** Burial at the cemetery: engaging community for prayers to dissipates tensions and provides respectful time.

**Step 12:** Return to the headquarters.

### TASK 4: Identify the legal procedures and the responsibility of different authorities for dead body disposal

- 1 Identify and write the responsibility of different authorities for dead body disposal as given under Table 1.
- 2 Get it checked with the trainer.

**Table 1 Identification of legal procedures and responsibility**

SI.No	Actions	Responsibility
1	Establish village/ward level committee for identification of dead bodies	
2	Prepare a record of details of the bodies retrieved in the Dead body Inventory record register	
3	Identification of the dead bodies and handing over to the next of kin	
4	Transport of unidentified dead bodies to the nearest hospital or mortuary at district/ sub division/ block level	
5	Make public announcement for establishing identity	
6	Handover of identified dead bodies to the next of kin	
7	Incase of unidentified dead bodies -prepare inventory, allocate individual identification number, photograph, finger print, obtain DNA sample if possible and fill Dead body Identification form	
8	Preserve the information recorded as forensic information	
9	Undertake last rights of unclaimed/unidentified dead bodies as per established religious practices	
10	Coordinate with NGO's and obtain their support	
11	Prepare the bodies of foreign nationals (I any) by embalming or chemical methods and then placed in body bags to handover to Ministry of External Affairs	

**Identify soil sample equipment's**

**Objectives:** At the end of this exercise you shall be able to

- identify name of the equipment's used in soil sampling
- demonstrate the application of various equipment's used in soil sampling.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
<ul style="list-style-type: none"> <li>• Computer with internet</li> <li>• Pencil &amp; pen</li> <li>• A4 sheet</li> <li>• LCD projector</li> </ul>	<ul style="list-style-type: none"> <li>- as reqd.</li> <li>- as reqd.</li> <li>- as reqd.</li> <li>- 1 No.</li> </ul>

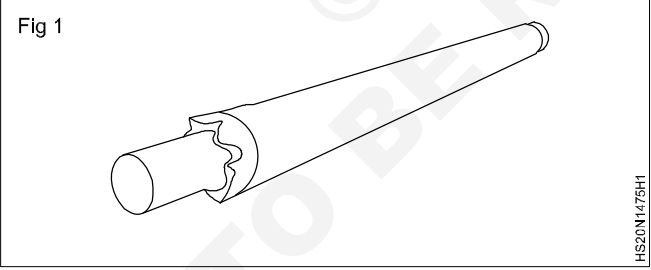

**Note:** Trainer will teach the trainee regarding the soil sampling techniques and various equipment's used for soil sampling using PPT and suitable demonstrations.

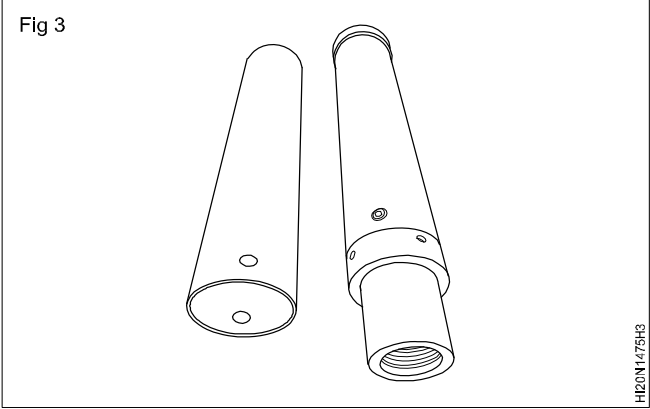
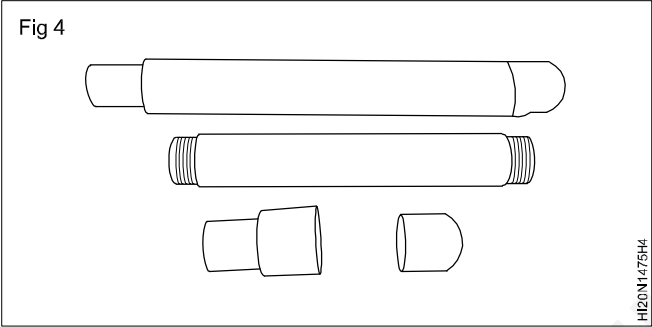
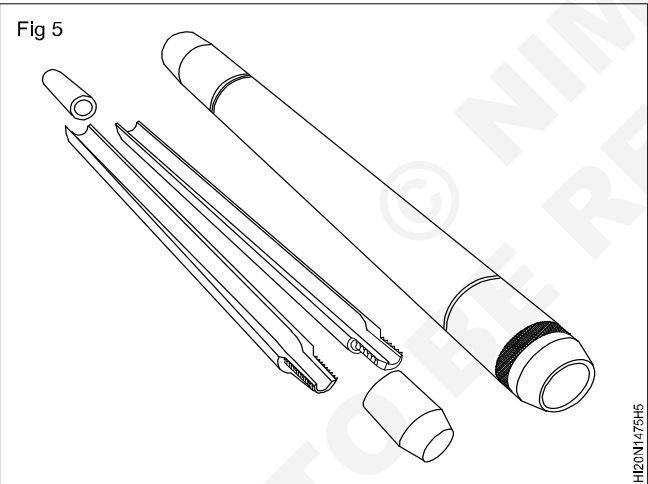
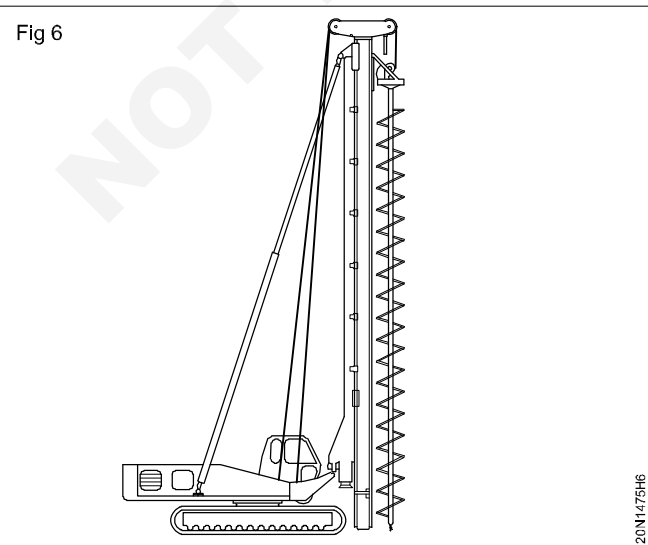
**PROCEDURE**

**TASK 1: Identification of the equipment's used in soil sampling**

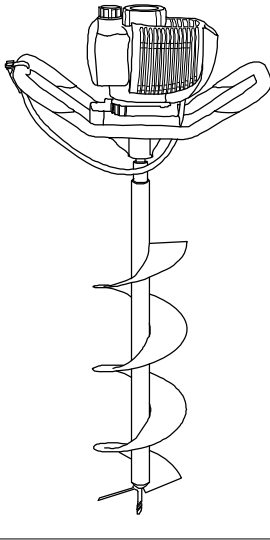
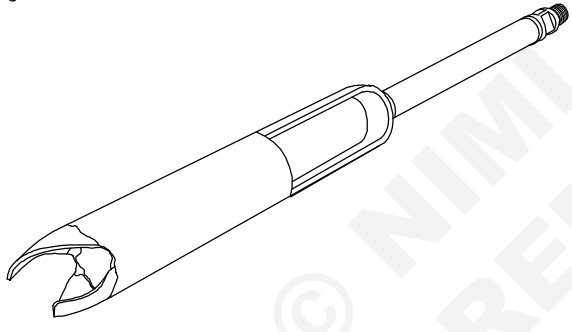
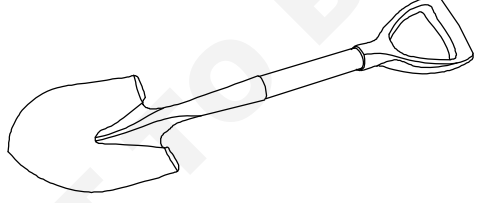
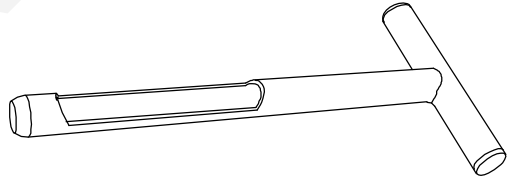
- 1 Write down the name of the equipment's used in soil sampling for the given images as per the Table 1.
- 2 Get it checked with the trainer.

**Table 1 Equipment's used in soil sampling**

Sl.No	Images	Name of the equipment
1		
2		

SI.No	Images	Name of the equipment
3	<p>Fig 3</p>  <p style="text-align: right; font-size: small;">HI20N1475H3</p>	
4	<p>Fig 4</p>  <p style="text-align: right; font-size: small;">HI20N1475H4</p>	
5	<p>Fig 5</p>  <p style="text-align: right; font-size: small;">HI20N1475H5</p>	
6	<p>Fig 6</p>  <p style="text-align: right; font-size: small;">HI20N1475H6</p>	



SI.No	Images	Name of the equipment
7	<p>Fig 7</p>  <p>HI20N1475H7</p>	
8	<p>Fig 8</p>  <p>HI20N1475H8</p>	
9	<p>Fig 9</p>  <p>HI20N1475H9</p>	
10	<p>Fig 10</p>  <p>HI20N1475H4</p>	

**TASK 2: Demonstrate the application of various equipment's used in soil sampling**

- 1 Write down the application of the various equipment's used in soil sampling as listed under Table 2.
- 2 Get it checked with the trainer.

**Table 2 Demonstration of application of various equipment's**

SI.No	Name of the equipment	Application/Uses
1	Soil sampling probe	
2	Shovel	
3	Soil auger	
4	Hand/Machine driven auger	
5	Continuous flied auger	
6	Split spoons/SPT sampler	
7	Modified California sampler	
8	Shelby tube sampler	
9	Piston sampler	
10	Pitcher barrel sampler	

**Sampling for assessment of soil pollution**

**Objectives:** At the end of this exercise you shall be able to

- identify the steps required for taking up soil for sampling
- identify the tools required for soil sampling
- demonstrate the assessment procedures for soil sampling
- tabulate the sources of the common organic and inorganic soil pollutants.

Requirements	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the sampling for assessment of soil pollution using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Identification of the steps required for taking up soil for sampling**

1 Write down the step by step procedure followed for taking the soil for sampling by using the given image below.

2 Get it checked with the trainer.

**Picking up soil for sampling. (Fig 1)**

Step 1:

Step 2:

Step 3:

Step 4:

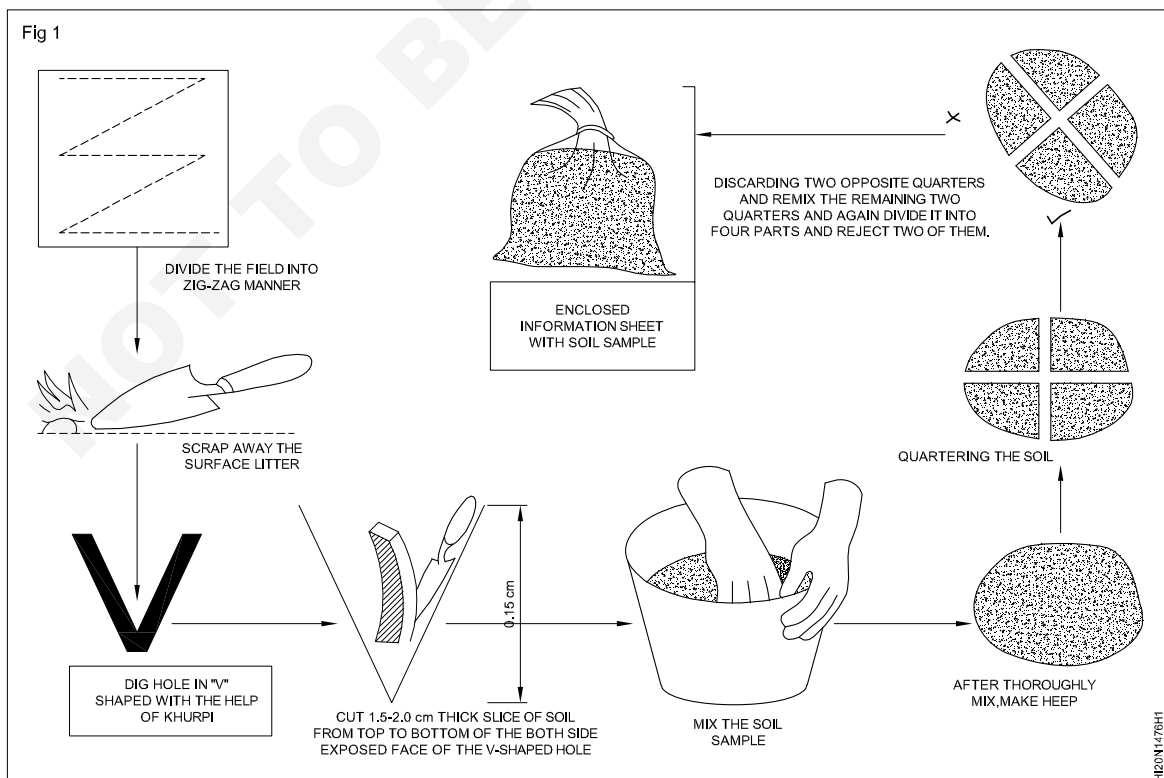
Step 5:

Step 6:

Step 7:

Step 8:

Step 9:

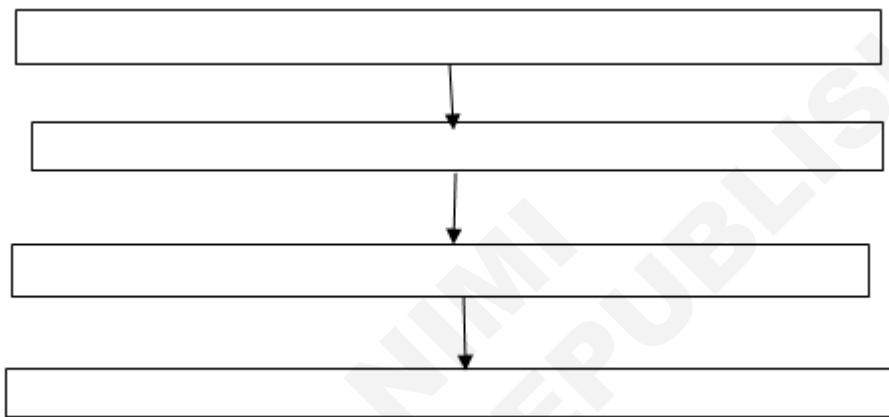


**TASK 2: Identification of the tools required for soil sampling**

- |  |                           |
|--|---------------------------|
| 1 Write down the name of the tools used for soil sampling. | <b>List of tools used</b> |
| 2 Get it checked with the trainer.                         | 1                         |
|  | 2                         |
|  | 3                         |
|  | 4                         |
|  | 5                         |
|  | 6                         |

**TASK 3: Demonstration of the assessment procedures for soil sampling**

- |  |                                    |
|--|------------------------------------|
| 1 Write down for the assessment procedures used in soil sampling as per the given flow diagram demonstrated below. | 2 Get it checked with the trainer. |
|--|------------------------------------|



**TASK 4: Tabulation of the sources of the common organic and inorganic soil pollutants**

- |   |                                    |
|---|------------------------------------|
| 1 Write down the source of the common organic and inorganic soil pollutants in the Table 1 given below. | 2 Get it checked with the trainer. |
|---|------------------------------------|

**Table 1 - Tabulation of common organic and inorganic soil pollutants**

SI.No	Pollutants	Sources
1	Hydrocarbons and other Volatile organic compounds(VOC)	
2	Agrichemicals	
3	Poly-aromatic hydrocarbons	
4	Polychlorinated biphenyls	
5	Organotin compounds	
6	Major human sources	
7	Inorganic chemicals	

**Treatment of soil after the pH and disinfection**

- Objectives:** At the end of this exercise you shall be able to
- identify and mark the pH level present in soil
  - identify the elements present in the soil by assessing the pH
  - demonstrate the problems and solution to adjust the pH
  - identify the end uses of disinfection treatment.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the treatment of soil after the pH and disinfection processes using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Identification and mark the pH level present in soil**

- 1 Mark the pH level present in soil by identifying the pH scale.
- 2 Get it checked with the trainer.



**Marking observations**

- 1 In the scale, mark the measure of acidity or alkalinity of the soil.
- 2 Mark the ideal pH for the soil.

**TASK 2: Identification of the elements present in the soil by assessing the Ph**

- 1 Write the elements present in the soil as demonstrated below under Table 1.
- 2 Get it checked with the trainer.

**Table 1 - Elements present in the soil**

Sl.No	pH level	Elements present in soil	Solutions to adjust the pH
1	Acidic		
2	Alkaline		

**TASK 3: Identification of the end-uses of disinfection treatment**

- 1 Write the area of concern for the given disinfectant treatment procedures as listed under Table 2.
- 2 Get it checked with the trainer.

**Table 2 - End-uses of the disinfection treatment**

SI.No	Treatment procedures	Area of concern
1	Containment technologies	
2	Soil washing technologies	
3	Thermal treatment technologies	
4	Vapour extraction technologies	
5	Bioremediation technologies	
6	Incineration technologies	

**Visit of housing for assessing sanitary standards and prescription of remedial measures**

**Objectives:** At the end of this exercise you shall be able to

- identify the standard rules for healthy housing
- identify the typical environmental health issues in housing
- identify the causes for unhealthy housing sanitation, effect on human health and remedial measures to overcome the same.

Requirements	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will take the trainee to the housing-areas nearby and ask them to observe the sanitary standards and preventive measures taken up for maintaining the health and hygiene of the public using suitable demonstrations and field visit.

**PROCEDURE**

**TASK 1: Identification of Standard rules for healthy housing**

- 1 Trainees are advised to write down the Do's and Dont's to be adopted for healthy housing environment under the given Table 1.
- 2 Get it checked with the trainer .

**Table 1 Standard rules for healthy housing**

SI.No	Do's	Don'ts
1		
2		
3		
4		
5		
6		

**TASK 2: Identification for the typical environmental health issues in housing**

- 1 Trainees are advised to identify possible adverse health and safety consequences for the given underlying determinants as given under Table 2.
- 2 Get it checked with the trainer.

**Table 2 Typical Environmental Health Issues: Determinants and Health Consequences**

SI.No	Underlying determinants	Possible adverse health and safety consequences
1	Inadequate water(quality and quantity), sanitation(wastewater and excreta removal) and solid waste disposal, improper hygiene(hand washing).	
2	Improper water resource management in housing including poor drainage.	
3	Crowded housing and poor ventilation of smoke.	
4	Exposures to vehicular and industrial air pollution.	
5	Population movement, encroachment and construction which affect feeding and breeding grounds of vectors, such as mosquitoes.	
6	Exposure to naturally occurring toxic substances.	
7	Natural resource degradation e.g, mudslides, poor drainage, erosion.	
8	Climate change, partly from combustion of greenhouse gases in transportation, industry and poor energy conservation in housing.	

**TASK 3: Identification of the causes for unhealthy housing sanitation, effect on human health and remedial measures to overcome the same**

- 1 Trainees need to identify the causes for unhealthy housing conditions, its effect on human health and solutions to overcome the same as given under Table 3.
- 2 Get it checked with the trainer.

**Table 3 - Causes for unhealthy housing and remedial measures to overcome the same**

SI.No	Causes for unhealthy housing conditions	Effect on human health	Possible solutions
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			



**Classify the overcrowding**

**Objectives:** At the end of this exercise you shall be able to

- assess the over-crowding in a household
- identify the standard of floor space per person in household.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainee regarding the classification of overcrowding in housing areas using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Assess the over-crowding in a household**

- 1 Trainer is asked to write the assessment of overcrowding in a household as per the given Table 1.
- 2 Get it checked with the trainer.

**Table 1 Assessment of overcrowding in a household**

Sl.No	No of rooms	Max no of persons recommended
1	One room	
2	Two room	
3	Three room	
4	Four room	
5	More than five rooms	

**TASK 2: Identification of the standard of floor space per person in household**

- 1 Trainer need to write the accepted floor-space per person in a household as per the given Table 2.
- 2 Get it checked with the trainer.

**Table 2 -Recommended Standard of floor space per person**

Sl.No	Total area	Max no of persons recommended
1	110 square feet	
2	90-100 square feet	
3	70-90 square feet	
4	50-70 square feet	
5	Less than 50 square feet	

**Inspection and preparation of fairs and festivals**

**Objectives:** At the end of this exercise you shall be able to

- inspect the guidelines to be followed in planning of fairs and festivals and prepare a report
- identify the risk assessment strategies to be analyzed in fairs and festivals
- prepare a checklist required for smooth conduction of fairs and festivals.

Requirements	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will take the trainees to the people gathering spots related to fairs and festivals and ask them to inspect the necessary tasks, responsibilities and preventive measures to be taken care for smooth conduction of events using suitable demonstrations and field visit.

**PROCEDURE**

**TASK 1: Preparation of report based on the inspection guidelines to be followed in planning of fairs and festivals**

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1 Trainees are advised to observe the following site inspection and prepare detailed answers/responses<br/>Trainees are advised in the form of a report based on the observations given below.</li> <li>2 Get it checked with the trainer.</li> </ol> | <ol style="list-style-type: none"> <li>3 Attendee contact information</li> <li>4 Health Screening</li> <li>5 Social distancing requirements</li> <li>6 Face covering requirements</li> <li>7 Controlled movement</li> <li>8 Cleaning and disinfection</li> <li>9 Communication</li> </ol> |
|--|---|

**Necessary Observations to be adopted for site inspection for fairs and festivals**

- 1 Fair and festival notice and approval
- 2 Capacity limitations

**TASK 2: Identification of risk assessment strategies in fairs and festivals**

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1 Trainees are advised to follow the guidelines/steps provided for risk assessment in fairs and festivals and prepare a detailed report.</li> <li>2 Get it checked with the trainer.</li> </ol> | <p><b>Step 2:</b> Decide if someone could be harmed and how. For each hazard you identify, list all the groups of people who may get affected</p> <p><b>Step 3:</b> Work out the risks</p> |
|--|--|

**Guidelines to compete the risk assessment in fairs and festivals**

**Step 1:** Identify the hazards

- Step 4:** Record your findings
- Step 5:** Review and revise

**TASK 3: Preparation checklist for smooth conduction of fairs and festivals**

- 1 Trainees are advised to prepare a checklist for conducting fairs and festivals by identifying right tasks, responsibility and completion date and additional requirements as per the Table 1 given below.
- 2 Get it checked with the trainer.

**Table 1 - Preparation checklist for fairs and festivals**

SI.No	Tasks	Responsibility	Completion date	Additional requirements
1				
2				
3				
4				
5				
6				
7				
8				

-----

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**Preparation of sanitary arrangements associated with natural calamities**

**Objectives:** At the end of this exercise you shall be able to

- inspect the guidelines to be followed in planning of fairs and festivals and prepare a report
- identify the risk assessment strategies to be analyzed in fairs and festivals
- prepare a checklist required for smooth conduction of fairs and festivals.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainees regarding the preparation of sanitary arrangements associated with natural calamities using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Preparation of report based on water and sanitation for emergency shelters during natural calamities**

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1 Trainees are advised to observe the water and sanitation for emergency shelters during natural calamities. They are advised to prepare a report based on the observations given below.</li> <li>2 Get it checked with the trainer.</li> </ol> <p><b>Necessary Observations regarding water and sanitation for emergency shelters</b></p> <ol style="list-style-type: none"> <li>1 Assess immediate population needs and available supply.</li> <li>2 Protect upstream water supplies and wells, treat all surface water as polluted.</li> </ol> | <ol style="list-style-type: none"> <li>3 Pump supplies to storage tanks, to be used as a basis for a more developed distribution system.</li> <li>4 Provide basic collection, storage and treatment facilities for protected sources.</li> <li>5 Prevent indiscriminate defecation through rapid provision of facilities.</li> <li>6 Provide safe disposal of excreta and refuse, controlling rodents and pests.</li> <li>7 Integrate hygiene promotion within community.</li> <li>8 Consider foundations for longer-term infrastructure and ensure their implementation will not be impeded in the future; in particular, ensure continued safety of local water resources which may be scarce.</li> </ol> |
|--|---|

**TASK 2: Preparation checklist for possible disruptions in health during natural calamities**

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1 Trainees are advised to prepare a checklist to suggest recommended actions and quickly re-establish adequate environmental health services and conditions during natural calamities based on the facts/matrix given in table 1</li> </ol> | <ol style="list-style-type: none"> <li>2 Get it checked with the trainer</li> </ol> |
|--|---|

**Table 1 Natural disaster affects matrix**

Sl.No	Common effects	Earthquake	Hurricane	Flood	Tsunami	Volcanic eruption
1	Water supply and wastewater disposal					
2	Solid waste handling					
3	Food handling					
4	Vector control					
5	Home sanitation					

1 - Severe possible effect

2 - Less severe possible effect

3- Least or no possible effect

-----

**TASK 3: Rapid assessment of sanitary requirements during natural calamities**

- |  |  |
|--|--|
| <p>1 Trainees are advised to prepare a detailed report as per the rapid assessment guidelines to be taken care to prepare sanitary arrangements during natural calamities.</p> <p>2 Get it checked with the trainer.</p> | <p>2 Accessibility and required means of transport to site of damage;</p> <p>3 Remaining operational capacity.</p> <p>4 Estimate of resources needed for repairs( personnel, equipment and materials).</p> <p>5 Estimated repair time.</p> |
|--|--|

**Rapid assessment guidelines**

- 1 Type, location, and extent of damage;

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**Visit various trade premises (diary, bakery, etc..)**

**Objectives:** At the end of this exercise you shall be able to

- inspect the diary and bakery units and assess its health and sanitation measures
- identify the risk assessment strategies to be analyzed during diary and bakery inspection
- prepare a scoring sheet/checklist necessary to be certified by the food safety inspectors.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note: Trainer will take the trainees to the nearby diary and bakery unit and ask them to assess the health standards and sanitary measures and ask the trainees to demonstrate the same.**

**PROCEDURE**

**TASK 1: Inspection of diary and bakery units and assessing its health and sanitation measures**

- 1 Trainees are advised to visit and inspect the food hygiene in the diary and bakery unit nearby and ensure that your staff is educated and able to self-inspect - daily based on the inspection guidelines suggested below.
- 2 Get it checked with the trainer.

**Inspection guidelines to be followed related to food hygiene at diary and bakery units**

In some units employees such as secretaries and valet attendants do not handle food, most employees do handle food in some way or another, and they need to have some type of food handlers training.

**Employees who handle food include the following**

- Bartenders cut fruit, make fresh juice, handle dairy, rotate stock.

- Food runners deliver food plates; prepare garnishes, clean plates off.
- Bussers deliver beverages, make hot drinks, clear dirty tables and reset clean tables.
- Servers do some or all of the above and need to understand allergens in prepared foods.
- Hosts may also help deliver food, clear dirty tables and reset clean tables.
- Chefs and cooks handle food from the back door to the plate and keep the kitchen safe.
- Dishwashers clean and sanitize glassware, dishes, pots and pans.

**TASK 2: Health-risk assessment of workers exposed to flour dust: Case study**

- 1 Trainees are advised to measure exposure to dust in the small bakery shops, to define the determinants of occupational asthma, and to propose control measures for the same as per the data given below under Table 1 & Table 2.
- 2 Get it checked with the trainer.

**Table 1 Characteristics of flour dust exposed workers and controls**

SI.No	Parameter	Flour dust exposure	Control measures
1	Age (years)		
2	Weight (kg)		
3	Height (cm)		
4	Work experience (years)		
5	Smokers (% total)		

**Table 2 - Respiratory symptoms among flour dust exposed workers and controls**

SI.No	Symptoms	Flour dust exposed	Control measures
1	Asthma		
2	Wheezing		
3	Running nose		
4	Chronic cough		
5	Dyspnea		
6	Chronic bronchitis		

-----

**TASK 3: Preparation of checklist necessary to be certified by the food safety officers**

1. Trainees are advised to prepare a checklist necessary to be certified by the food safety officers as per the given score-sheet Table 3.
- 2 Get it checked with the trainer

**Table 3 Score-sheet necessary to be inspected by the food safety officers**

SI.No	Checklist	Findings noted	Marks to be awarded
1	Design and Facilities	Compliance(C)/Non-Compliance (NC)/Partial Compliance (PC)/No applicable/not observed (NA)	
2	Control of operation	Compliance(C)/Non-Compliance (NC)/Partial Compliance (PC)/No applicable/not observed (NA)	
3	Maintenance and sanitation	Compliance(C)/Non-Compliance (NC)/Partial Compliance (PC)/No applicable/not observed (NA)	
4	Personal hygiene	Compliance(C)/Non-Compliance (NC)/Partial Compliance (PC)/No applicable/not observed (NA)	
5	Training and complaint handling	Compliance(C)/Non-Compliance (NC)/Partial Compliance(PC)/No applicable/not observed (NA)	

-----

### Visit to a factory for survey of sanitation problems of workplace

**Objectives:** At the end of this exercise you shall be able to

- assess the various service measures taken in a factory with respect to health and hygiene of the workers and prepare a report
- take a survey related to the quality of water used in the workplace and prepare a report
- take a survey on the sanitation facility provided in the workplace and prepare a report.

#### Requirements

##### Tools/Instruments

- Computer with internet - as reqd.
- Pencil & pen - as reqd.
- A4 sheet - as reqd.
- LCD projector - 1 No.

**Note:** Trainer will take the trainee to the nearby factory and ask the trainees to make up survey of sanitation problems of workplace using suitable demonstrations and field visit.

#### PROCEDURE

**TASK 1: Assess the various service measures taken in a factory with respect to health and hygiene of the workers and prepare a report**

- 1 Trainees are advised to assess the various service measures taken in a factory with respect to health and hygiene of the workers as per the observations given under Table 1 and prepare a detailed report.
- 2 Get it checked with the trainer.

**Table 1 Survey questions and indicators with respect to health and hygiene in a factory**

Sl.No	Service Type	Accessibility	Possible indicators
1	Drinking water 1. Improved or unimproved; surface water 2. Basic and limited services 3. Safely managed services	3a - accessibility 3b - availability 3c - quality	Safely Managed/Basic/ Limited/Unimproved/ Surface water
2	Sanitation 1. Improved or unimproved; open defecation 2. Basic and limited services facilities	3a - emptying of on-site 3b - treatment and disposal of excreta from on-site facilities [3c - treatment of wastewater]	Safely Managed/Basic/ Limited/Unimproved/ open defecation
3	Hygiene 1. Facility or no facility 2. Basic and limited hand washing facility	3a - accessibility 3b - availability 3c - quality	Basic/Limited/No facility



**TASK 2: Take a survey related to the quality of water used in the workplace and prepare a report**

- 1 Trainees are advised to visit a nearby factory and take a survey related to the drinking water cleanliness in the workplace based on the points given below and prepare a detailed report.
- 2 Get it checked with the trainer.
- 2 Where is that water collected from?
- 3 How long does it take to go there, get water, and come back?
- 4 In the last month, has there been any time when your household did not have sufficient quantities of drinking water when needed?

**Surveillance points to be noted for preparation of report**

- 1 What is the main source of water used by members of your household for other purposes, such as cooking and hand washing?
- 5 Conduct tests within 30 minutes of collecting samples and record the readings.



**TASK 3: Take a survey on the sanitation facility provided in the workplace and prepare a report**

- 1 Trainees are advised to visit a nearby factory and take a survey related to the sanitation facility in the workplace based on the points given below and prepare a detailed report.
- 2 Get it checked with the trainer.
- 2 Where is this toilet facility located?
- 3 Has your (pit latrine or septic tank) ever been emptied?
- 4 When the last time it was emptied, where were the contents emptied to? Was it removed by a service provider?

**Surveillance points to be noted for preparation of report**

- 1 Do you share this facility with others who are not members of your household?



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**Identification of danger zones and adequacy of safety arrangements**

**Objectives:** At the end of this exercise you shall be able to

- identify the hazard zones in a factory and make a register
- assess the possible risks in a workplace using the given template
- ensure the safety arrangements in a workplace through a proper survey.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will take the trainee to the nearby factory and ask them to observe the danger zones and adequacy of safety arrangements using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Identify the hazard zones in a factory and make a register**

- 1 Trainees are advised to record the possible hazards that could be identified in a workplace as per the example of hazard/control measure register as suggested under Table 1.
- 2 Get it checked with the trainer.

**Table 1 Example of hazard/control measure register**

Sl.No	Hazard Identification	Control measure	Functionality
1			
2			

**TASK 2: Assess the possible risks in a workplace**

- 1 Trainees are advised to assess the possible risks that could be identified in a workplace based on the template provided under Table 1.
- 2 Get it checked with the trainer.

**Table 2 Risk assessment template**

Company name:

Assessment carried out by:

Date of next review:

Date assessment was carried out:

What are the hazards?	Who might be harmed and how?	What are you already doing to control the risks?	What further action do you need to take to control the risks?	Who needs to carry out the action?	When is the action needed by?	Done

**TASK 3: Ensure the safety arrangements in a workplace through a proper survey**

- 1 Trainees are advised to ensure the safety arrangements in a workplace by using a proper survey form as demonstrated under Table 3.
- 2 Get it checked with the trainer.

**Table 3 Awareness of occupational health and safety in a workplace -Survey Form**

SI.No	Statements Agree	Strongly	Agree	Disagree disagree	Strongly	NA
1	I am clear about my rights and responsibilities in relation to workplace health and safety.					
2	I am clear about my employers 'rights and responsibilities in relation to workplace health and safety.					
3	I know how to perform my job in a safe manner.					
4	If I became aware of a health or safety hazard at my workplace, I know who (at my workplace) I would report it to					
5	I have the knowledge to assist in responding to any health and safety concerns at my workplace.					
6	I know what the necessary precautions are that I should take while doing my job.					
7	I feel free to voice concerns or make suggestions about workplace health and safety at my job.					
8	If I notice a workplace hazard, I would point it out to management.					
9	I know that I can stop work if I think something is unsafe and management will not give me a hard time.					
10	If my work environment was unsafe I would not say anything, and hope that the situation eventually improves (reverse scored).					
11	I have enough time to complete my work tasks safely.					

**Note: For each item below, please put an X under the heading that best describes how much you agree or disagree with the statement.**

**Identification and use of insecticides, pesticides and disinfectants**

**Objectives:** At the end of this exercise you shall be able to

- **classify the insecticides**
- **identify the common types of pesticides**
- **demonstrate the use, advantages and disadvantages of disinfectants.**

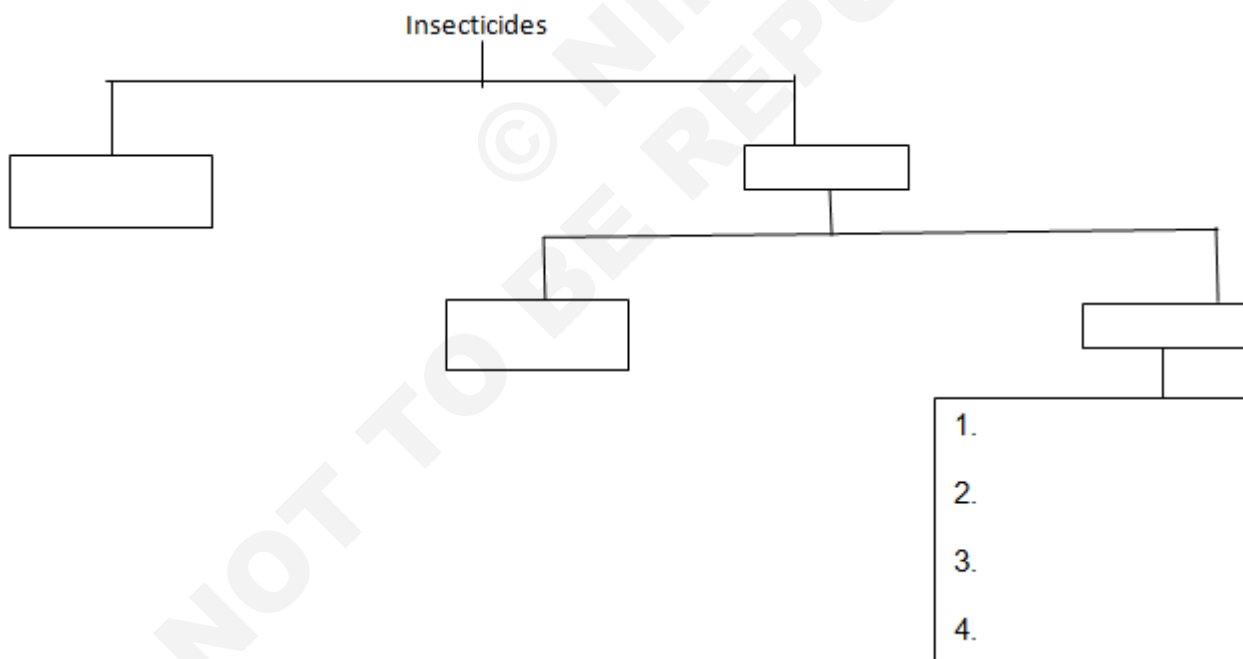
Requirements	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainees regarding the identification and use of insecticides, pesticides and disinfectants using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Classification of insecticides**

- 1 Trainer is advised to classify the insecticides based on the flow diagram given below.
- 2 Get it checked with the trainer.



**TASK 2: Identification of the common types of pesticides**

- 1 Trainer is advised to write down the purpose and examples for various common types of pesticides listed below under Table 1.
- 2 Get it checked with the trainer.

**Table 1 Common types of pesticides, purpose and examples**

SI.No	Category	Purpose	Examples
1	Insecticides		
2	Herbicides		
3	Fungicides		
4	Rodenticides		
5	Disinfectants		
6	Wood preservatives		

-----

**TASK 3: Demonstration of the use, advantages and disadvantages of disinfectants**

- 1 Trainer is advised to write down the use, advantages and disadvantages of disinfectants for the given type of disinfectants under Table 2.
- 2 Get it checked with the trainer.

**Table 2 Write the use, advantages and disadvantages of disinfectants**

SI.No	Type	Use	Advantages	Disadvantages
1	Alcohol			
2	Chlorine			
3	Iodophores			
4	Phenols			
5	Quaternary ammonium compounds			

-----

**Application of techniques of sterilization and disinfection of various articles**

**Objectives:** At the end of this exercise you shall be able to

- sketch the methods of sterilization and disinfection techniques
- demonstrate the advantages, disadvantages and common uses for different sterilization techniques
- demonstrate the difference between sterilization and disinfection techniques.

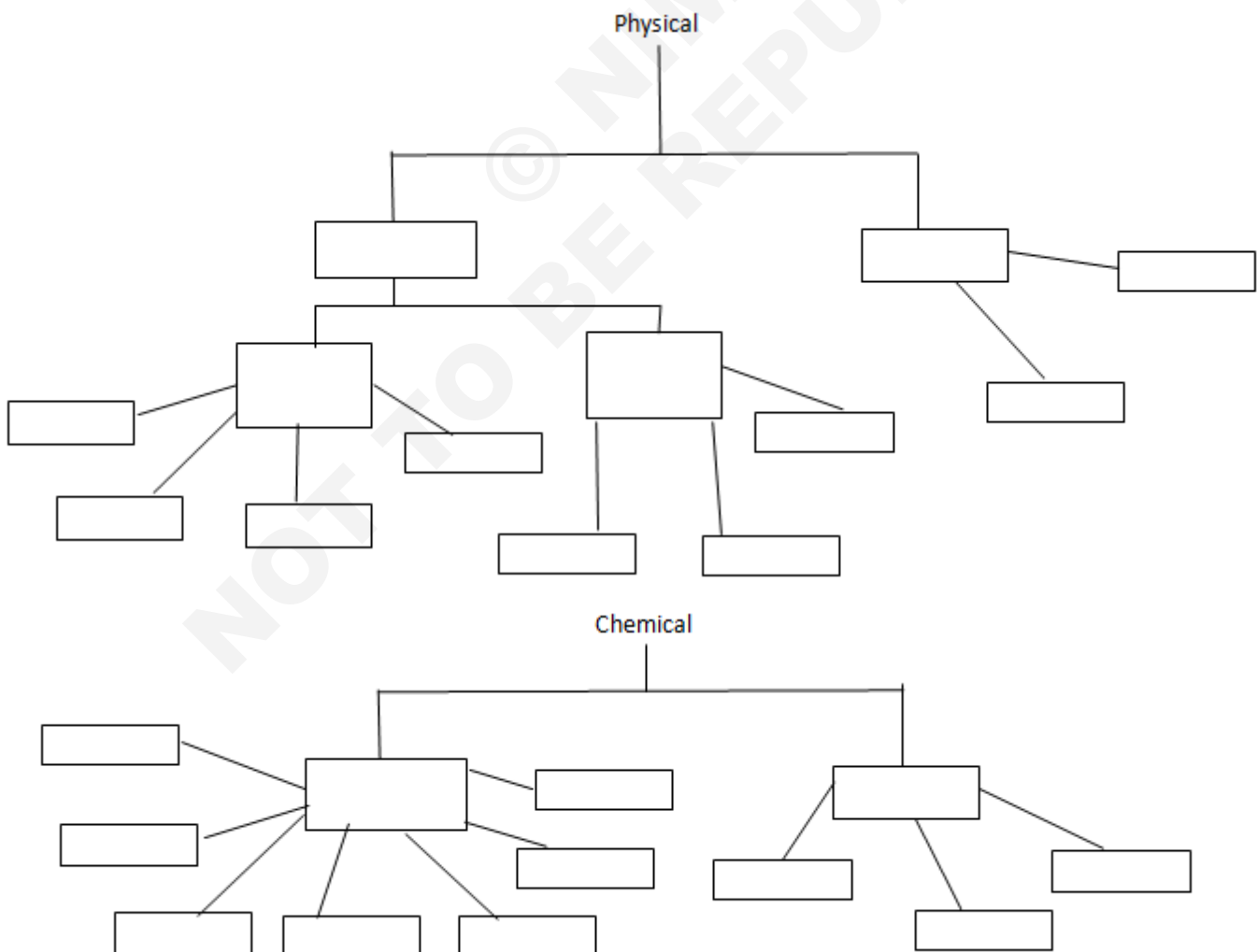
Requirements			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• A4 sheet	- as reqd.
• Pencil & pen	- as reqd.	• LCD projector	- 1 No.

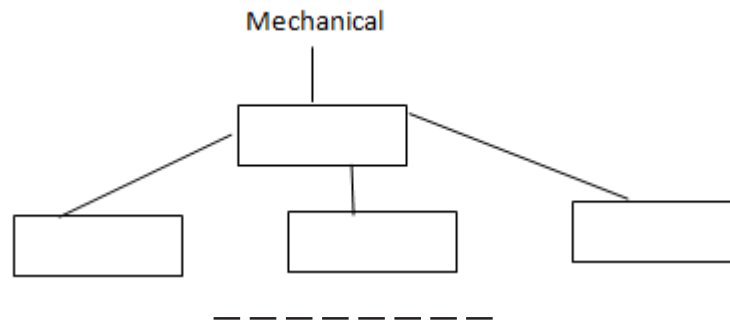
**Note:** Trainer will teach the trainees regarding the application of techniques of sterilization and disinfection of various articles using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Identification of the methods of sterilization and disinfection**

- 1 Trainer is advised to sketch the methods of different sterilization and disinfection techniques as per the flow diagram demonstrated below.
- 2 Get it checked with the trainer.





**TASK 2: Demonstrate the advantages, disadvantages and common uses for different sterilization techniques**

- 1 Trainer is advised to write the advantages, disadvantages and common uses for different sterilization techniques under the given Table 1.
- 2 Get it checked with the trainer.

**Table 1 - Advantages, disadvantages and common uses for different sterilization techniques**

SI.No	Sterilization method	Advantages	Disadvantages	Common uses
1	Steam			
2	Flaming			
3	Incineration			
4	Dry heat			
5	Formaldehyde			
6	Filtration			
7	Radiation			
8	Ozone			
9	Plasma			
10	ETO			

**TASK 3: Demonstrate the difference between sterilization and disinfection techniques**

- 1 Trainer is advised to write down the differences between sterilization and disinfection techniques as per the given Table 2.
- 2 Get it checked with the trainer.

**Table 2 Difference between sterilization and disinfection techniques**

SI.No	Parameters	Sterilization	Disinfection
1	Definition		
2	Methods		
3	Application		
4	Spreading of an infection		
5	Examples		

**Identification of different parts of spraying equipment**

**Objectives:** At the end of this exercise you shall be able to

- identify the names of different spraying equipment
- demonstrate the uses of different spraying equipment's
- sketch the knapsack sprayer and label its parts.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
<ul style="list-style-type: none"> <li>• Computer with internet</li> <li>• Pencil &amp; pen</li> <li>• A4 sheet</li> <li>• LCD projector</li> </ul>	<ul style="list-style-type: none"> <li>- as reqd.</li> <li>- as reqd.</li> <li>- as reqd.</li> <li>- 1 No.</li> </ul>

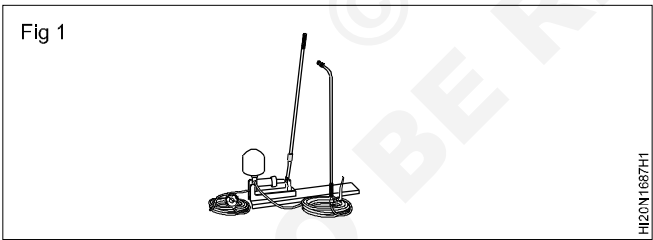
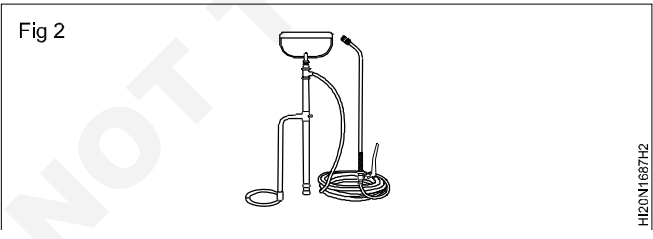

**Note:** Trainer will teach the trainees regarding the different parts of spraying equipment using PPT and suitable demonstrations.

**PROCEDURE**



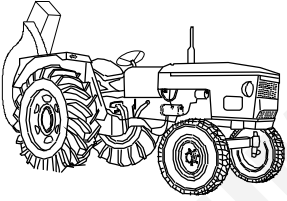
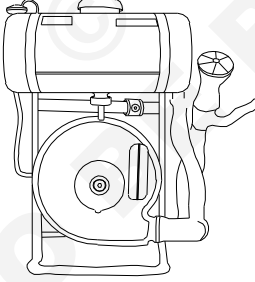
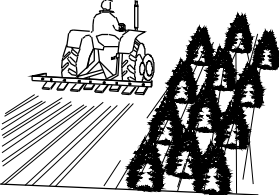
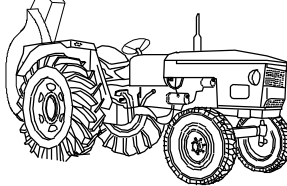
**TASK 1: Identification of the names of different spraying equipment**

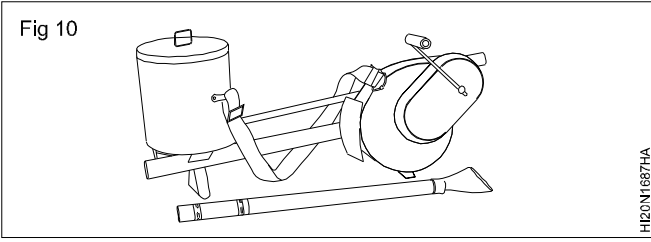
- 1 Trainees are advised to write the names of the different spraying equipment for the given images listed under Table 1.
- 2 Get it checked with the trainer.

**Table 1 - Identification of the names of different spraying equipment**

Sl.No	Spraying equipment	Name of the equipment
1	 <p>Fig 1</p> <p style="text-align: right; font-size: small;">HI20N1687H1</p>	
2	 <p>Fig 2</p> <p style="text-align: right; font-size: small;">HI20N1687H2</p>	
3		



SI.No	Spraying equipment	Name of the equipment
4	<p>Fig 4</p>  <p>HI20N1687H4</p>	
5	<p>Fig 5</p>  <p>HI20N1687H5</p>	
6	<p>Fig 6</p>  <p>HI20N1687H6</p>	
7	<p>Fig 7</p>  <p>HI20N1687H7</p>	
8	<p>Fig 8</p>  <p>HI20N1687H8</p>	
9	<p>Fig 9</p>  <p>HI20N1687H9</p>	

SI.No	Spraying equipment	Name of the equipment
10		

**TASK 2: Demonstrate the uses of different spraying equipment's**

- 1 Trainees are advised to write the names of the different spraying equipment for the given images listed under Table 2.
- 2 Get it checked with the trainer.

**Table 2 - Demonstrate the uses of different spraying equipment's**

SI.No	Name of the spraying equipment	Uses
1	Hand sprayer	
2	Stirrup pump sprayer	
3	Hand compression sprayer	
4	Racker sprayer	
5	Food sprayer	
6	Knapsack power sprayer	
7	Blower sprayer	
8	Tractor Mounted sprayer	
9	Aeroblast sprayer	
10	Hand rotary duster	

**TASK 3: Sketch the knapsack sprayer and label its parts**

- 1 Trainees are advised to illustrate the knapsack sprayer and label its parts.
- 2 Get it checked with the trainer.

**Identify and use of larvicides**

**Objectives:** At the end of this exercise you shall be able to

- draw and label the life cycle of mosquitoes
- demonstrate the types of larvicides
- demonstrate the mode of action, advantages and limitations of larvicides.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD projector	- 1 No.
• Pencil & pen	- as reqd.	• Chart paper	- 1 No.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainees regarding the use of larvicides using PPT and suitable demonstrations.

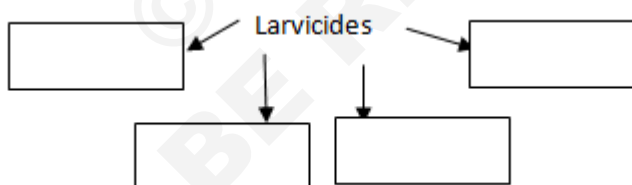
**PROCEDURE**

**TASK 1: Sketching and labeling the life cycle of mosquitoes**

- 1 Trainees are advised to illustrate the life cycle of mosquito and label its parts.
- 2 Get it checked with the trainer.

**TASK 2: Demonstrate the types of larvicides**

- 1 Trainees are advised to categorize the types of larvicides as per the flow diagram.
- 2 Get it checked with the trainer.



**TASK 3: Demonstrate the mode of action, advantages and limitations of larvicides**

- 1 Trainees are advised to write the mode of action, advantages and limitations of larvicides as per the types given under Table 1.
- 2 Get it checked with the trainer.

**Table 1 Mode of action, advantages and limitations of larvicides**

SI.No	Larvicides	Mode of action	Advantages	Limitations
1	Bacterial larvicides			
2	Spinosyns			
3	Petroleum products			
4	Monomolecular surface films(MMF)			
5	Insect growth regulators			
6	Essential oils and plant extracts			
7	Synthetic chemicals			

## Operation and maintenance of spraying equipment

**Objectives:** At the end of this exercise you shall be able to

- identify the uses of different spraying components
- demonstrate the safety precautions in the operation of sprayers
- demonstrate the steps adopted in assessing the efficiency of spray nozzles
- inspect the spraying procedures and demonstrate the same .

### Requirements

#### Tools/Instruments

- Computer with internet - as reqd.
- Pencil & pen - as reqd.
- A4 sheet - as reqd.
- LCD projector - 1 No.

**Note:** Trainer will teach the trainees regarding the operation and maintenance of spraying equipment using PPT and suitable demonstrations.

## PROCEDURE

### TASK 1: Identification of the uses of different spraying components

- 1 Trainees are advised to write the uses of different spraying components as per the list given under Table 1.
- 2 Get it checked with the trainer.

**Table 1 Identification of the uses of different spraying components**

Sl.No	Sprayer components	Uses
1	Tanks	
2	Pumps	
3	Agitators	
4	Strainers	
5	Hoses	
6	Pressure gauges	
7	Control valves	
8	Nozzles	
9	Spray monitors	

### TASK 2: Demonstrate the safety precautions in the operation of sprayers

- 1 Trainees are advised to demonstrate the safety precautions in operation of sprayers as per the points suggested below.
- 2 Get it checked with the trainer.

a Precautions before spraying

b Precautions during spraying

c Precautions after spraying

-----  
**TASK 3: Demonstrate the steps adopted in assessing the efficiency of spray nozzles**

- |   |  |         |
|---|--|---------|
| 1 | Trainees are advised to demonstrate the steps adopted in testing of spray nozzles. | Step 1: |
|   |  | Step 2: |
| 2 | Get it checked with the trainer.   | Step 3: |
|   |  | Step 4: |

-----  
**TASK 4: Inspect the spraying procedures and demonstrate the same**

- |   |  |         |
|---|--|---------|
| 1 | Trainees are advised to visually inspect the spraying procedures and demonstrate the same in the form of simplified steps. | Step 1: |
|   |  | Step 2: |
|   |  | Step 3: |
| 2 | Get it checked with the trainer.   | Step 4: |
|   |  | Step 5: |
|   |  | Step 6: |
-

**Identify and use of rodenticides**

**Objectives:** At the end of this exercise you shall be able to

- identify the action of rodenticides necessary for the targeted species
- identify the type and day of feeding needed for the given rodenticides.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• A4 sheet	- as reqd.
• Pencil & pen	- as reqd.	• LCD projector	- 1 No.

**Note: Trainer will teach the trainees regarding the application of rodenticides using PPT and suitable demonstrations.**

**PROCEDURE**

**TASK 1: Identifying the action of rodenticides necessary for the targeted species**

- 1 Trainees are advised to identify action of rodenticides necessary for the targeted species as per the list given under Table 1.
- 2 Get it checked with the trainer.

**Table 1 Action of rodenticides necessary for the targeted species**

SI.No	Rodenticides	Target species
1	Brodifacoum	
2	Bromadiolone	
3	Chlorophacianone	
4	Coumafurryl	
5	Dipha cinane	
6	Difenacoum	
7	Warfarin	

**TASK 2: Identifying the type and day of feeding needed for the given rodenticides**

- 1 Trainees are advised to identify the type and day of feeding needed for the given rodenticides as per the list given under Table 2.
- 2 Get it checked with the trainer.

**Table 2 - Type and day of feeding needed for the given rodenticides**

SI.No	Rodenticide	Type	Day of feeding needed
1	Warfarin		
2	Chlorophacianone		
3	Dipha cinane		
4	Difethalone		
5	Brodifacoum		
6	Bromethalin		
7	Zinc phosphide		
8	Strychnine		

**Designing of posters on Malaria**

**Objectives:** At the end of this exercise you shall be able to

- design posters on the symptoms of malaria
- design posters on malaria prevention
- demonstrate the world malaria day using suitable illustration.

**Requirements**

**Tools/Instruments**

- |                          |            |
|--------------------------|------------|
| • Computer with internet | - as reqd. |
| • Pencil & pen           | - as reqd. |
| • A4 sheet               | - as reqd. |
| • LCD projector          | - 1 No.    |

**Note: Trainer will teach the trainees regarding the impact of malaria, symptoms of malaria and preventive measures to overcome the malaria using PPT and suitable demonstrations.**

**PROCEDURE**

**TASK 1: Design posters on the symptoms of malaria**

- |  |   |
|--|---|
| 1 Trainees are advised to design a poster related to the symptoms of malaria based on the details given below. | Related Symptoms: cough, fever, difficulty breathing, headache, tired, aches, sweats, chills. |
| 2 Get it checked with the trainer.   |   |

**TASK 2: Design posters on malaria prevention**

- |  |   |
|--|---|
| 1 Trainees are advised to design a poster regarding the malaria prevention based on the details given below. | Malaria preventive measures: Drain the water reservoir regularly, Close the water reservoir, Bury used goods, Using mosquito repellent spray/lotion, Using bed net. |
| 2 Get it checked with the trainer.   |   |

**TASK 3: Sketch and demonstrate the world malaria day**

- |   |                                    |
|---|------------------------------------|
| 1 Trainees are advised to sketch the poster related to world malaria day and ask to demonstrate the same. | 2 Get it checked with the trainer. |
|---|------------------------------------|

**Designing of posters on roles and responsibilities of a health inspector**

**Objectives:** At the end of this exercise you shall be able to

- design posters related to the PPE required for a health inspector
- sketch the roles and responsibilities of a health inspector and demonstrate the same.

Requirements	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note: Trainer will teach the trainees regarding the roles and responsibilities of a health inspector using PPT and suitable demonstrations.**

**PROCEDURE**

**TASK 1: Design posters related to the PPE required for a health inspector**

- 1 Trainees are advised to design a poster related to the Personal protective equipment's required for a health inspector based on the details below.
- 2 Get it checked with the trainer.

**Related PPE's of a health inspector**

- a Head protection;
- b Eye protection;
- c Hand protection;
- d Foot protection,
- e Face shield &
- f Protective clothing

**TASK 2: Illustrate the roles and responsibilities of a health inspector**

- 1 Trainees are advised to illustrate the works related to health inspector such as food service, sanitary inspection, pollution prevention, awareness programme schemes on health education and demonstrate the same.
- 2 Get it checked with the trainer.



**Demonstration of health awareness program as a class activity**

**Objectives:** At the end of this exercise you shall be able to

- demonstrate the health awareness program using supporting activities in the classroom
- create posters and display them individually.

Requirements			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD projector	-1 No.
• Markers	- as reqd.	• Poster boards	- as reqd.
• Color Pencils and Pen	- as reqd.		
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainees regarding the health awareness programme by using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Group Activity I**

- |  |   |
|--|---|
| <p>1 Group the trainees as different batches having 3-4 trainees in a batch.</p> <p>2 Instruct the trainees to find health tips using internet and then ask them to create health posters by illustrating 6-8 different health tips (each student should</p> | <p>choose and illustrate two tips) on the poster boards or poster size sections of scroll paper.</p> <p>3 Trainees will then hang their completed posters around the classroom, creating an exhibition to each other.</p> |
|--|---|

**TASK 2: Demonstration of the activity posters**

- |  |   |
|--|---|
| <p>1 Trainees are advised to educate each other by demonstrating on the information from their health posters created in the classroom activity discussed above.</p> | <p>2 Get it checked with the trainer.</p> |
|--|---|

**TASK 3: Activity model using exercises**

- |  |  |
|--|--|
| <p>1 The trainer will prepare discussion questions with an exercise related to health education and place them around the classroom.</p> | <p>2 Ask the trainees to pick one randomly and ask them to demonstrate the same.</p> <p>3 Evaluate the response of the trainees.</p> |
|--|--|

## Designing environmental sanitation posters

**Objectives:** At the end of this exercise you shall be able to

- design an poster for good and bad sanitation practices
- design a poster on the contaminated water and preventive ways
- design a poster on preventing microbes using good sanitation principles.

### Requirements

#### Tools/Instruments

- |                          |            |                 |            |
|--------------------------|------------|-----------------|------------|
| • Computer with internet | - as reqd. | • LCD projector | -1 No.     |
| • Markers                | - as reqd. | • Poster boards | - as reqd. |
| • Color Pencils and Pen  | - as reqd. |                 |            |
| • A4 sheet               | - as reqd. |                 |            |

**Note:** Trainer will teach the trainees regarding the environmental sanitation techniques using PPT and suitable demonstrations.

## PROCEDURE

### TASK 1: Design a poster for good and bad sanitation practices

- 1 Trainees are advised to design a poster related to good and bad sanitation practices using suitable illustrations.
- 2 Get it checked with the trainer.

### TASK 2: Design a poster on water contamination and provide solutions

- 1 Trainees are advised to create posters related to water contamination and provide suitable solutions to overcome the same using suitable illustrations.
- 2 Get it checked with the trainer.

### TASK 3: Design a poster on preventing microbes using good sanitation principles

- 1 Trainees are advised to design a poster on preventing microbes using good sanitation principles using suitable illustrations.
- 2 Get it checked with the trainer.

## Designing posters on balanced diet

**Objectives:** At the end of this exercise you shall be able to

- design a pyramid related to healthy foods
- design a poster related to healthy plate
- design a poster on good and unhealthy food.

### Requirements

#### Tools/Instruments

- |                          |            |                 |            |
|--------------------------|------------|-----------------|------------|
| • Computer with internet | - as reqd. | • LCD projector | -1 No.     |
| • Markers                | - as reqd. | • Poster boards | - as reqd. |
| • Color Pencils and Pen  | - as reqd. |                 |            |
| • A4 sheet               | - as reqd. |                 |            |

**Note:** Trainer will teach the trainees regarding the significance of balanced diet using PPT and suitable demonstrations.

## PROCEDURE

### TASK 1: Design a pyramid related to healthy foods

- 1 Trainees are advised to design a poster related to healthy food using suitable illustrations.
- 2 Get it checked with the trainer.

### TASK 2: Design a poster related to healthy plate

- 1 Trainees are advised to design a poster related to usage of healthy plate using suitable illustrations.
- 2 Get it checked with the trainer.

### TASK 3: Design a poster on good and unhealthy food

- 1 Trainees are advised to design a poster related to good and unhealthy food using suitable illustrations.
- 2 Get it checked with the trainer.

## Designing poster on basic hygiene practices

**Objectives:** At the end of this exercise you shall be able to

- design a poster on hand washing steps
- design a poster on taking care of yourself
- design a poster on healthy habits.

### Requirements

#### Tools/Instruments

- |                          |            |                 |            |
|--------------------------|------------|-----------------|------------|
| • Computer with internet | - as reqd. | • LCD projector | -1 No.     |
| • Markers                | - as reqd. | • Poster boards | - as reqd. |
| • Color Pencils and Pen  | - as reqd. |                 |            |
| • A4 sheet               | - as reqd. |                 |            |

**Note:** Trainer will teach the trainees regarding the basic hygiene practices using PPT and suitable demonstrations.

## PROCEDURE

### TASK 1: Design a poster on hand washing steps

- 1 Trainees are advised to design a poster related to steps involved in hand washing using suitable illustrations.
- 2 Get it checked with the trainer.

### TASK 2: Design a poster on taking care of yourself

- 1 Trainees are advised to design a poster related to healthy food using suitable illustrations.
- 2 Get it checked with the trainer.

### TASK 3: Design a poster on healthy habits

- 1 Trainees are advised to design a poster related to healthy food using suitable illustrations.
- 2 Get it checked with the trainer.

**Preparing power point presentation on health awareness**

**Objectives:** At the end of this exercise you shall be able to

- **prepare a power point based on the health awareness questionnaire.**

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD projector	-1 No.
• Markers	- as reqd.	• Poster boards	- as reqd.
• Color Pencils and Pen	- as reqd.		
• A4 sheet	- as reqd.		

**Note: Trainer will teach the trainees regarding the biological health awareness using suitable demonstrations and illustrations.**

**PROCEDURE**

**TASK 1: Preparation of power-point based on health awareness questionnaire**

- |   |  |
|---|--|
| 1 Trainees are advised to preparation of power-point based on health awareness questionnaire. | 4 What are some public health issues today?      |
| 2 Get it checked with the trainer.  | 5 WHO's Top 10 health risks?                     |
|   | 6 Discuss about important health awareness days? |

**Questionnaire**

- |   |   |
|---|---|
| 1 What is a health awareness?                 | 7 Discuss about the preventive measures of risk diseases? |
| 2 What is the importance of health awareness? | 8 Give some tips to be healthy.                           |
| 3 How do you promote health awareness?        |   |

-----

**Demonstration of preparation of ORS**

**Objectives:** At the end of this exercise you shall be able to

- demonstrate the preparation of ORS
- demonstrate the recommended amount of ORS according to age
- classify the types of ORS
- demonstrate the signs and symptoms of dehydration.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD projector	-1 No.
• Markers	- as reqd.	• Poster boards	- as reqd.
• Color Pencils and Pen	- as reqd.		
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainees regarding the preparation of ORS using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Demonstrate the preparation of ORS**

- 1 Trainees are advised to write the stepwise preparation of ORS one by one and demonstrate the same.
- 2 Get it checked with the trainer.

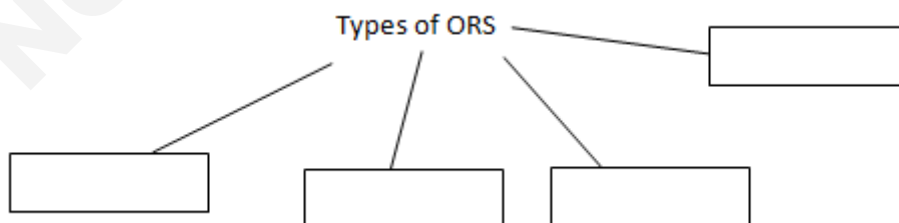
**TASK 2: Demonstrate the recommended amount of ORS according to age**

- 1 Trainees are advised to recommend the exact amount of ORS according to different age groups under the given Table 1.
- 2 Get it checked with the trainer.

**Table 1 Recommended amount of ORS according to age**

Sl.No	Age group	Weight	Solution(ml)
1			
2			
3			

**TASK 3: Classification of ORS**



**TASK 4: Demonstrate the signs and symptoms of dehydration**

- 1 Trainees are advised to write down the signs and symptoms of dehydration under the given Table 2.
- 2 Get it checked with the trainer.

**Table 2 Signs and symptoms of dehydration**

SI.No	Signs/symptoms	No dehydration	Some dehydration	Severe dehydration
1	Appearance			
2	Ability to drink			
3	Sunken eyes			
4	Skin pinch			
5	Tongue and oral mucosa			
6	Anterior fontanelle			
7	Urine output			

-----

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**Preparing charts on personal hygiene habits**

**Objectives:** At the end of this exercise you shall be able to

- prepare a chart on hand wash
- prepare a chart on maintaining health of body
- prepare a chart on maintaining health of teeth
- prepare a chart on waste disposal and cleanliness
- prepare a chart on hygienic steps followed during cough and cold.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD projector	- 1 No.
• Pencil & pen	- as reqd.	• Chart	- as reqd.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainees regarding the personal hygiene habits using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Prepare a chart on hand wash**

- 1 Trainees are advised to prepare a chart on hand wash procedures.
  - 2 Get it checked with the trainer.
- 

**TASK 2: Prepare a chart on maintaining health of body**

- 1 Trainees are advised to prepare a chart on the maintenance of body health.
  - 2 Get it checked with the trainer.
- 

**TASK 3: Prepare a chart on maintaining health of teeth**

- 1 Trainees are advised to prepare a chart on the maintenance of healthy teeth.
  - 2 Get it checked with the trainer.
- 

**TASK 4: Prepare a chart on waste disposal and cleanliness**

- 1 Trainees are advised to prepare a chart on waste disposal and cleanliness.
  - 2 Get it checked with the trainer.
- 

**TASK 5: Prepare a chart on hygienic steps followed during cough and cold**

- 1 Trainees are advised to prepare a chart on the hygiene steps followed during cough and cold.
  - 2 Get it checked with the trainer.
-



**Designing posters on Do's and Don'ts's in a social behavior**

**Objectives:** At the end of this exercise you shall be able to  
 • design a poster on Do's and Don'ts in a social behavior.

Requirements			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD projector	-1 No.
• Markers	- as reqd.	• Poster boards	- as reqd.
• Color Pencils and Pen	- as reqd.		
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainees regarding the necessary Do's and Don'ts to be practiced during social behavior using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Designing posters on Do's and Don'ts's in a social behavior**

- 1 Trainees are advised to design a poster on Do's and Don'ts to be practiced in a social behavior based on the following points suggested below.
- 2 Get it checked with the trainer.

- 4 Following directions
- 5 Respecting personal space

**Do's to be practiced in a social behavior**

- 1 Sharing
- 2 Cooperating
- 3 Listening

**Don'ts to be practiced in a social behavior**

- 1 Aggressive behavior
- 2 Violent behavior
- 3 Social anxiety disorder
- 4 Unnecessary temperament
- 5 Improper communication

-----

**Demonstration of hand washing and caring**

**Objectives:** At the end of this exercise you shall be able to

- demonstrate the hand washing practices
- demonstrate the care to be taken care during hand washing
- demonstrate the Do's and Don't's during hand wash.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainees regarding the necessary Do's and Don'ts to be practiced during social behavior using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Demonstration of hand washing practices**

- 1 Trainees are advised to write the type of agent, purpose, area and duration based on the different hand washing methods proposed under Table 1.
- 2 Get it checked with the trainer.

**Table 1 Demonstration of hand washing practices**

Sl.No	Hand washing methods	Type of agent	Purpose	Area	Duration
1	Routine hand wash				
2	Antiseptic hand wash				
3	Antiseptic hand rub				
4	Surgical antisepsis				

**TASK 2: Demonstrate the care to be taken care during hand washing**

- 1 Trainees are advised to demonstrate the hand washing technique with soap and water using suitable illustrations.
- 2 Get it checked with the trainer.

**TASK 3: Demonstrate the Do's and Don't's during hand wash**

- 1 Trainees are advised to demonstrate the Do's and Don'ts to be practiced during hand wash.
- 2 Get it checked with the trainer.

**Demonstration on oral hygiene**

**Objectives:** At the end of this exercise you shall be able to

- demonstrate the steps to brush your teeth
- demonstrate the flossing technique
- design a poster on dental caries prevention.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainees regarding the importance of oral hygiene using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Demonstrate the steps to brush your teeth**

- 1 Trainees are advised to demonstrate the steps to brush the teeth using the images given below.
- 2 Get it checked with the trainer.

Step 1:

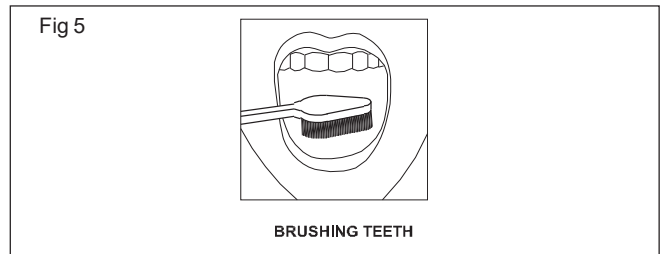
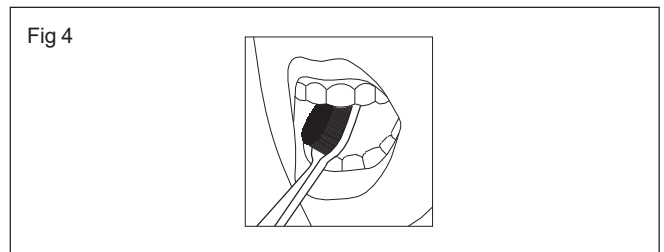
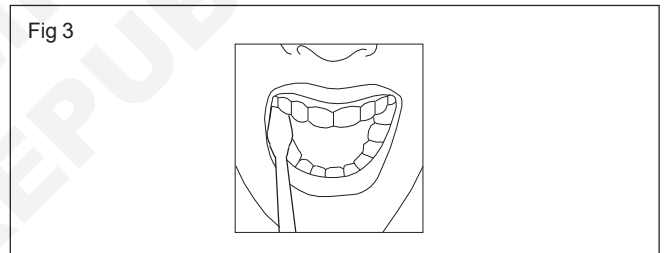
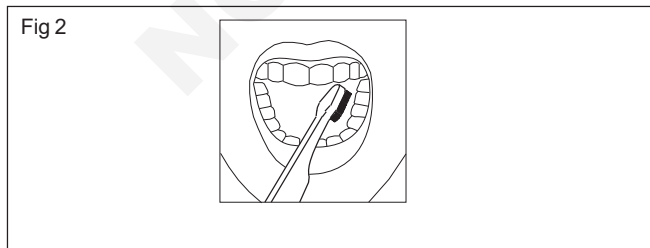
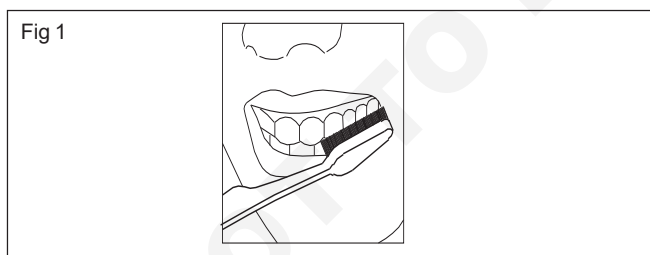
Step 2:

Step 3:

Step 4:

Step 5:

**Brushing teeth**

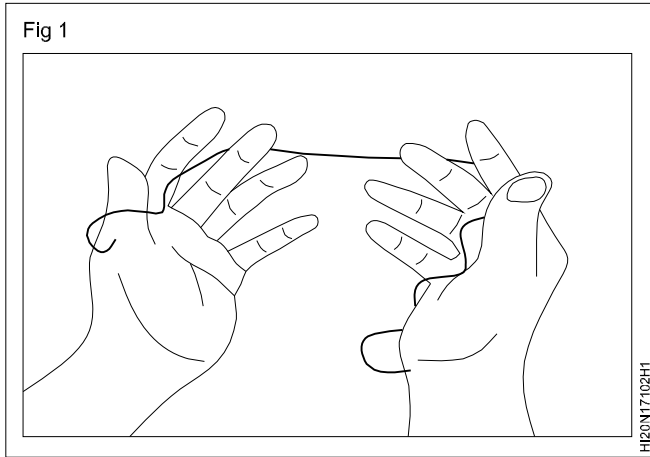


**TASK 2: Demonstrate the flossing technique**

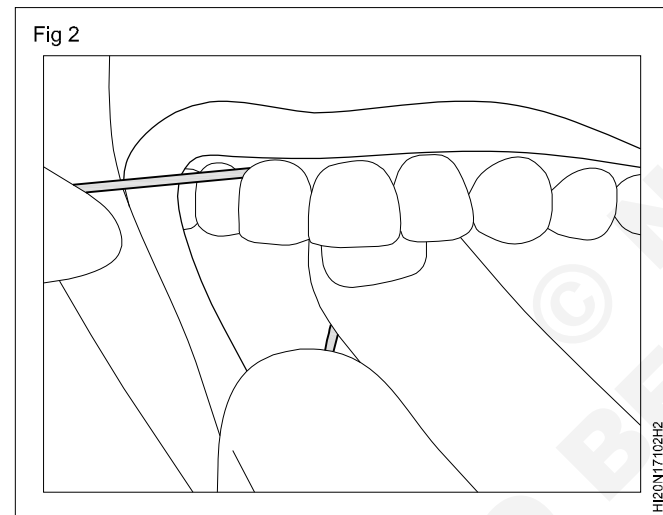
1 Trainees are advised to write the steps involved in the flossing technique by referring the given images below.

2 Get it checked with the trainer.

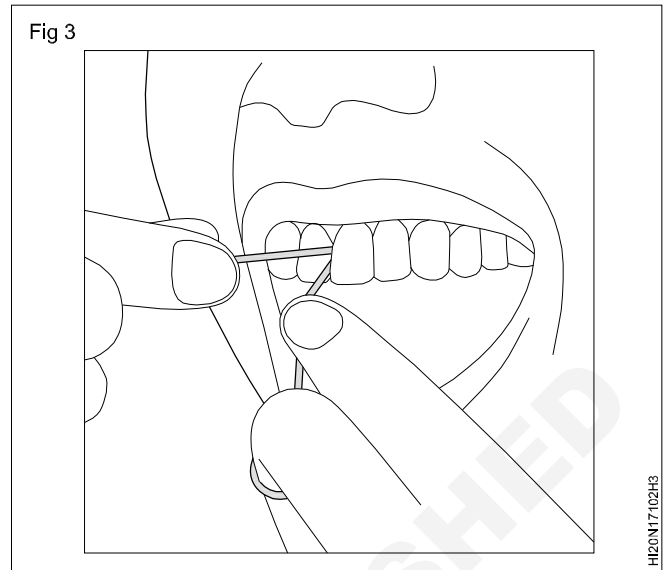
Step 1



Step 2



Step 3



-----  
**TASK 3: Design a poster on dental caries prevention**

1 Trainees are advised to design a poster on prevention of dental caries and demonstrate the same.

2 Get it checked with the trainer.

-----

**Dressing of wounds, bandages**

**Objectives:** At the end of this exercise you shall be able to

- identify the wound and demonstrate the same
- demonstrate the types of wound dressings and applications
- identify the types of bandages and demonstrate the same
- advantages and disadvantages of different types of wound dressings.

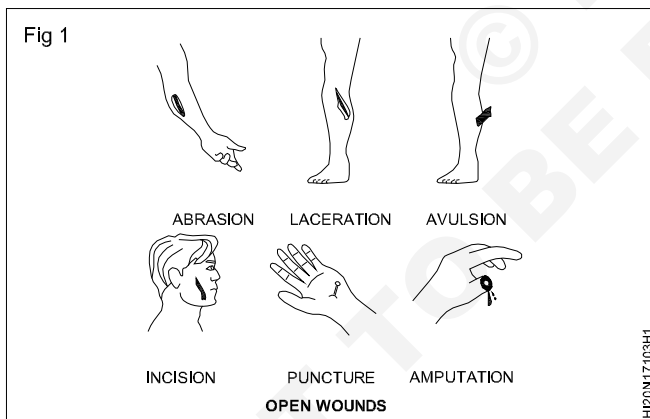
<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD projector	- 1 No.
• Pencil & pen	- as reqd.	• First Aid kit	- 2 Nos.
• A4 sheet	- as reqd.		

**Note: Trainer will teach the trainees regarding the wound dressings and bandages and its applications using PPT and suitable demonstrations.**

**PROCEDURE**

**TASK 1: Identify the wound and demonstrate the same**

- 1 Trainees are advised to identify the different types of wound for the given images represented under table-1 and demonstrate the same.
- 2 Get it checked with the trainer.



**Closed wounds**



**TASK 2: Demonstrate the types of wound dressing and applications**

- 1 Trainees are advised to write down the application for the different types of wound dressings represented under Table 1.
- 2 Get it checked with the trainer.

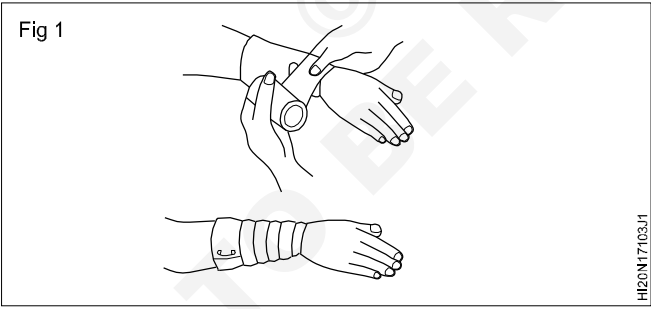
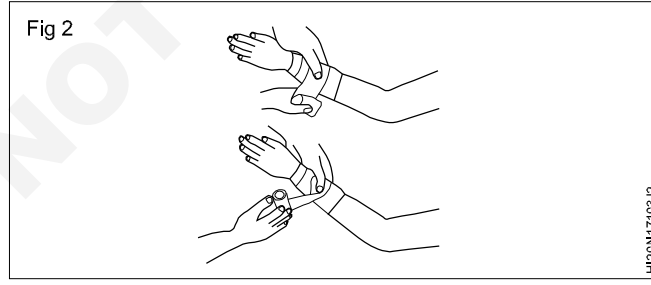
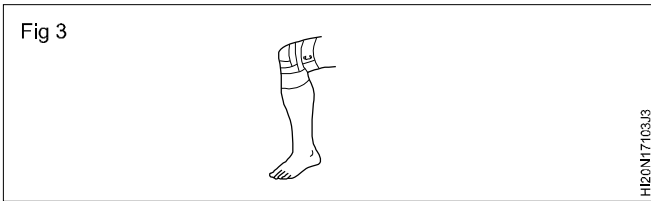
**Table 1 Types of wound dressings and its applications**

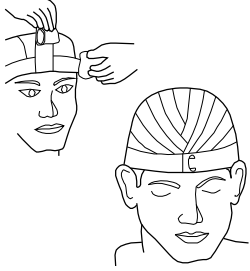
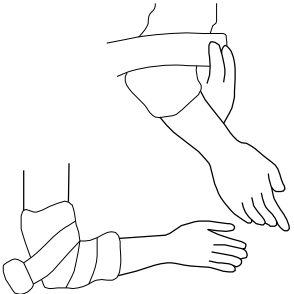
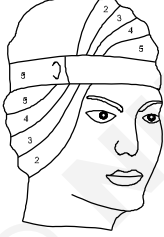

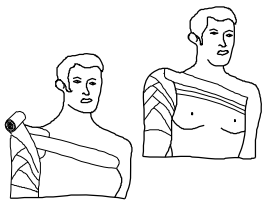

SI.No	Types of wound dressings	Applications
1	Gauze sponge	
2	Gauze bandage roll	
3	Non-adherent pads	
4	Non-adherent wet dressing	
5	Foam dressing	
6	Calcium alginates	
7	Hydrogel dressings	
8	Transparent dressings	
9	Alcohol preps	

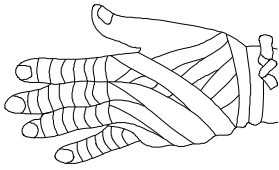
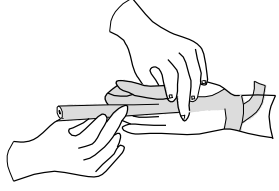
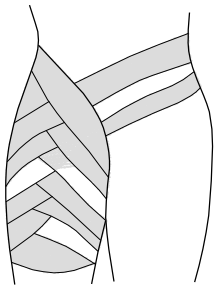
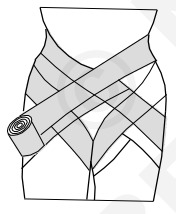


**TASK 2: Identify the types of bandages and demonstrate the same**

- 1 Trainees are advised to identify the types of bandages for the given images as represented under Table 2.
- 2 Get it checked with the trainer.

**Table 2 Identify the types of bandages for the given**

SI.No	Images	Types of bandage
1	<p>Fig 1</p>  <p style="text-align: right; font-size: small;">HE20N17103J1</p>	
2	<p>Fig 2</p>  <p style="text-align: right; font-size: small;">HE20N17103J2</p>	
3	<p>Fig 3</p>  <p style="text-align: right; font-size: small;">HE20N17103J3</p>	

Sl.No	Images	Types of bandage
4	<p>Fig 4</p>  <p>H120N17103J4</p>	
5	<p>Fig 5</p>  <p>H120N17103J5</p>	
6	<p>Fig 6</p>  <p>H120N17103J6</p>	
7	<p>Fig 7</p>  <p>H120N17103J7</p>	
8	<p>Fig 8</p>  <p>H120N17103J8</p>	
9	<p>Fig 9</p>  <p>H120N17103J9</p>	

SI.No	Images	Types of bandage
10	<p>Fig 10</p>  <p>HI20N17103JA</p>	
11	<p>Fig 11</p>  <p>HI20N17103JB</p>	
12	<p>Fig 12</p>  <p>HI20N17103JC</p>	
13	<p>Fig 13</p>  <p>HI20N17103JD</p>	
14	<p>Fig 14</p>  <p>HI20N17103JE</p>	
15	<p>Fig 15</p>  <p>HI20N17103JF</p>	



- 1 Trainees are advised to write the advantages and disadvantages of different types of wound dressings.

**Table 3 Advantages and disadvantages of different types of wound dressings**

SI.No	Types of wound dressings	Advantages	Disadvantages
1	Gauze sponge		
2	Gauze bandage roll		
3	Non-adherent pads		
4	Non-adherent wet dressing		
5	Foam dressing		
6	Calcium alginates		
7	Hydrogel dressings		
8	Transparent dressings		
9	Alcohol preps		

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**Management of bone injuries with splints, slings**

**Objectives:** At the end of this exercise you shall be able to

- identify the type of splint based on the area of injury
- identify the type of splints
- identify the types of splints used on the type of injuries
- demonstrate the steps to form a sling.

Requirements			
Tools/Instruments			
• Computer with internet	- as reqd.	• LCD projector	- 1 No.
• Pencil & pen	- as reqd.	• First Aid kit	- 2 Nos.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainees regarding the management of bone injuries with splints, slings using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Identify the type of splint based on the area of injury**

- 1 Trainees are advised to identify the type of splint based on the area of injury as given under Table 1.
- 2 Get it checked with the trainer.

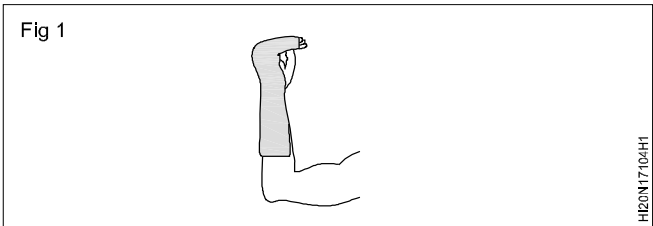
**Table 1 Write the type of splint used for area of injury**

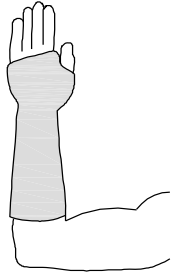
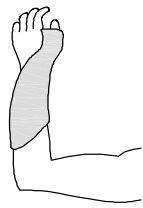

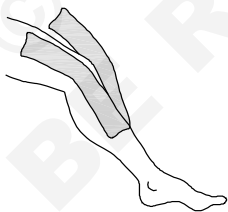

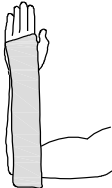
SI.No	Area of injury	Type of splint
1	Hand/ finger	
2	Forearm/wrist	
3	Elbow/Forearm	
4	Knee	
5	Tibia/Fibula	
6	Ankle	
7	Foot	

**TASK 2: Identify the type of splints**

- 1 Trainees are advised to identify the type of splint based on the given images represented under Table 2.
- 2 Get it checked with the trainer.

**Table 2 Identify the type of splints**

SI.No	Images	Type of splint
1		

Sl.No	Images	Type of splint
2	<p>Fig 2</p>  <p>HI20N17104H2</p>	
3	<p>Fig 3</p>  <p>HI20N17104H3</p>	
4	<p>Fig 4</p>  <p>HI20N17104H4</p>	
5	<p>Fig 5</p>  <p>HI20N17104H5</p>	
6	<p>Fig 6</p>  <p>HI20N17104H6</p>	
7	<p>Fig 7</p>  <p>HI20N17104H7</p>	

**TASK 3: Identify the types of splints used on the type of injuries**

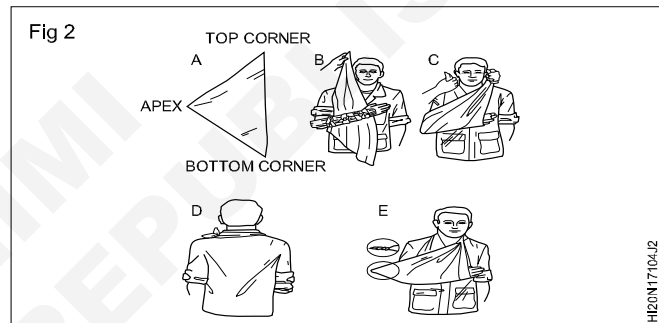
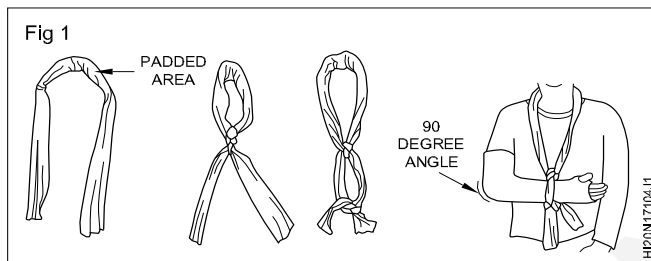
- 1 Trainees are advised to identify the types of splints used on the type of injuries as represented under Table 3.
- 2 Get it checked with the trainer.

**Table 3 Types of slings used on the type of injuries**

SI.No	Types of slings	Type of injuries
1	Arm sling	
2	Elevation sling	
3	Scalp bandage	

**TASK 4: Demonstrate the steps to form a sling**

- 1 Trainees are advised to demonstrate the steps to form a sling using them as a model as per the given figures namely Figs 1&2 represented below.
- 2 Get it checked with the trainer.



**Transportation of injured and unconscious cases and their management**

- Objectives:** At the end of this exercise you shall be able to
- demonstrate the transportation of injured using the images
  - demonstrate the Do's and Dont's during transportation
  - demonstrate the steps of recovery position for breathing
  - demonstrate CPR technique
  - demonstrate the first aid procedures
  - illustrate the basic items in the first aid box.

<b>Requirements</b>			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD projector	- 1 No.
• Pencil & pen	- as reqd.	• First Aid kit	- 2 Nos.
• A4 sheet	- as reqd.		




**Note:** Trainer will teach the trainees regarding the transportation of injured and unconscious cases and their management using PPT and suitable demonstrations.

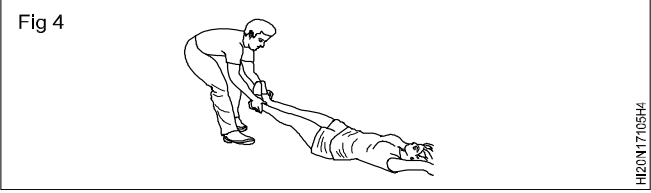
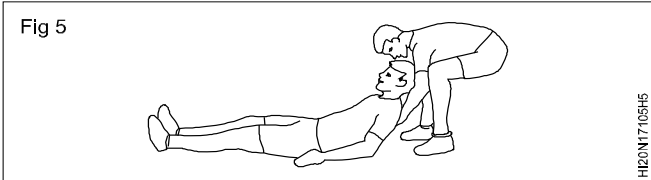
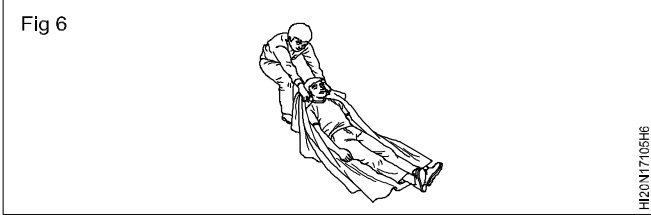
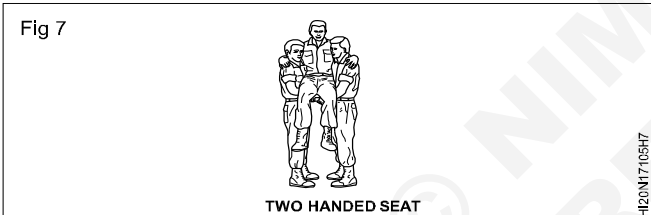
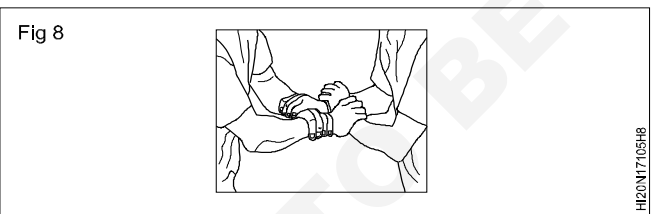
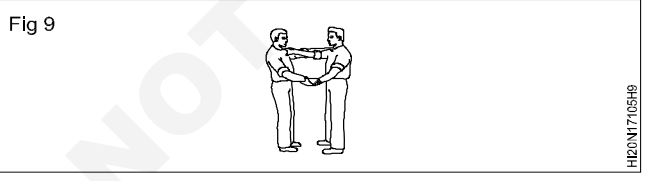
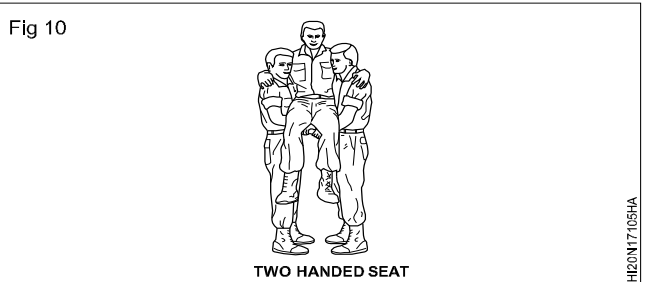
**PROCEDURE**

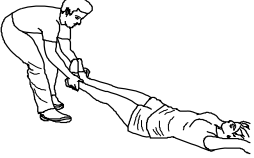
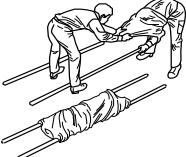


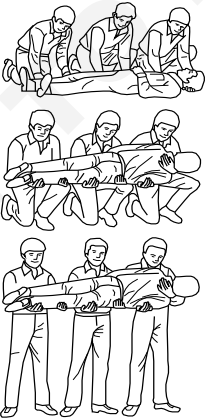
**TASK 1: Demonstrate the transportation of injured using the images**

- 1 Trainees are advised to demonstrate the transportation of injures using the given images under Table 1.
- 2 Get it checked with the trainer.

**Table 1 -Transportation of injured and unconscious**

SI.No	Images	Demonstrate the transportaution method
1	<p>Fig 1</p>  <p>ONE-PERSON LIFT</p> <p style="text-align: right; font-size: small;">HI20N17105H1</p>	
2	<p>Fig 2</p>  <p>FIREFIGHTER CARRY</p> <p style="text-align: right; font-size: small;">HI20N17105H2</p>	
3	<p>Fig 3</p>  <p>PACK-STRAP CARRY</p> <p style="text-align: right; font-size: small;">HI20N17105H3</p>	

SI.No	Images	Demonstrate the transportaution method
4	<p>Fig 4</p>  <p style="text-align: right;">HI20N17105H4</p>	
5	<p>Fig 5</p>  <p style="text-align: right;">HI20N17105H5</p>	
6	<p>Fig 6</p>  <p style="text-align: right;">HI20N17105H6</p>	
7	<p>Fig 7</p>  <p style="text-align: center;">TWO HANDED SEAT</p> <p style="text-align: right;">HI20N17105H7</p>	
8	<p>Fig 8</p>  <p style="text-align: right;">HI20N17105H8</p>	
9	<p>Fig 9</p>  <p style="text-align: right;">HI20N17105H9</p>	
10	<p>Fig 10</p>  <p style="text-align: center;">TWO HANDED SEAT</p> <p style="text-align: right;">HI20N17105HA</p>	

SI.No	Images	Demonstrate the transportaion method
11	<p>Fig 4</p>  <p>HI20N17105H4</p>	
12	<p>Fig 12</p>  <p>IMPROVISED STRETCHER</p> <p>HI20N17105HC</p>	
13	<p>Fig 13</p>  <p>HAMMOCK CARRY</p> <p>HI20N17105HD</p>	
14	<p>Fig 14</p>  <p>HAMMOCK CARRY</p> <p>HI20N17105HE</p>	
15	<p>Fig 15</p>  <p>THREE PERSON CARRY OR STRETCHER LIFT</p> <p>HI20N17105HF</p>	

**TASK 2: Demonstrate the Do's and Don't's during transportation**

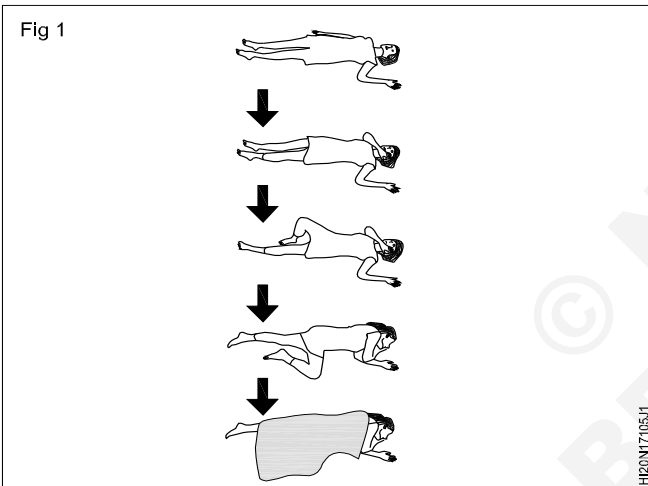
- 1 Trainees are advised to demonstrate the Do's and Don't's during transportation under Table 2.
- 2 Get it checked with the trainer.

**Table 2 Do's and Don't's**

SI.No	Do's	Don't's
1		
2		
3		
4		
5		

**TASK 3: Demonstrate the steps of recovery position for breathing**

- 1 Trainees are advised to demonstrate the step by step procedure of recovery position for breathing for the given illustration namely Fig 1 represented below.
- 2 Get it checked with the trainer.



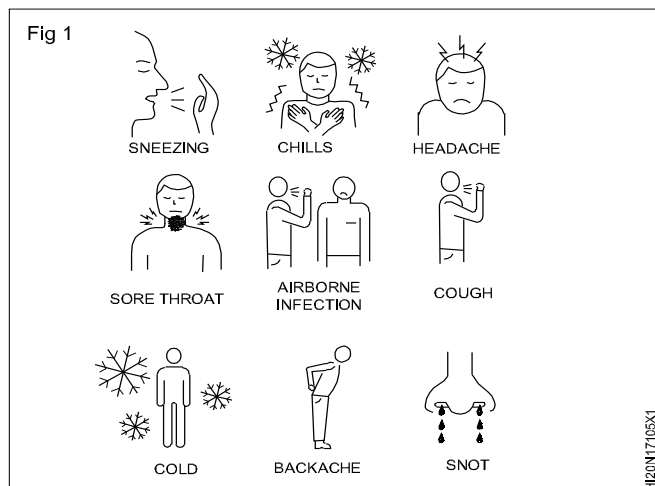
**TASK 4: Demonstrate CPR technique with your fellow met as a model**

- 1 Trainees are advised to demonstrate the CPR technique using them as a model as per the given steps and image namely Fig 2 represented below.
- 2 Get it checked with the trainer.

**Steps to adapt**

- 1 Position your hand
- 2 Interlock finger
- 3 Give chest compression
- 4 Open the airway
- 5 Give rescue breaths
- 6 Watch chest fall
- 7 Repeat chest compressions and rescue breaths

**Upper respiratory tract infections (URTI)**





**TASK 5: Demonstrate the first aid procedures for the given conditions**

- 1 Trainees are advised to demonstrate the first aid procedures for the given conditions represented under Table 3.
- 2 Get it checked with the trainer.

**Table 3**

Sl.No	Injury	First aid Treatment
1	Nose bleed	
2	Animal bites	
3	Serious falls	
4	Severe wounds	
5	Small wounds	
6	Bruises	
7	Burns -1st degree & 2nd degree	
8	Burns -3rd degree	

**TASK 6: Illustrate the basic items in the first aid box**

- 1 Trainees are advised to sketch the tools and accessories present in the first aid box kit.
- 2 Get it checked with the trainer.

**Diagnosis and treatment of minor ailments, cough, fever, bleeding, toothache,etc...**

**Objectives:** At the end of this exercise you shall be able to

- demonstrate the signs and symptoms of fever
- demonstrate the fever reference chart
- identify the first aid measures to be given to reduce the temperature
- demonstrate how to treat minor knife cut at home
- demonstrate the common causes of toothache
- demonstrate some home remedies for toothache
- draw and label the parts of respiratory system
- demonstrate the upper respiratory tract infections, causes, symptoms and remedies.

Requirements			
Tools/Instruments			
• Computer with internet	- as reqd.	• LCD projector	- 1 No.
• Pencil & pen	- as reqd.	• First Aid kit	- 2 Nos.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainees regarding the diagnosis and treatment of minor ailments, cough, fever, bleeding, toothache using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Demonstrate the signs and symptoms of fever**

- 1 Trainees are advised to demonstrate the signs and symptoms of fever.
- 2 Get it checked with the trainer.

**TASK 2: Demsontrate the fever reference chart**

- 1 Trainees are advised to demonstrate the fever reference chart as per Table 1 represented below.
- 2 Get it checked with the trainer.

**Table 1 Fever reference chart**

SI.No	Method	Normal temperature range
1	Rectum	
2	Mouth	
3	Armpit	
4	Ear	

**TASK 3: Identify the first aid measures to be given to reduce the temperature**

- 1 Trainees are advised to write the first aid measures to be given to reduce the temperature.
  - a
  - b
  - c
  - d
  - e
- 2 Get it checked with the trainer.

**TASK 4: Demonstrate how to treat minor knife cut at home**

- 1 Trainees are advised to demonstrate how to treat minor knife cut at home. a
  - 2 Get it checked with the trainer. b
- c
- d
- e
- 

**TASK 5: Demonstrate the common causes of toothache**

- 1 Trainees are advised to demonstrate the common causes of toothache. a
  - 2 Get it checked with the trainer. b
- c
- d
- e
- 

**TASK 6: Demonstrate some home remedies for toothache**

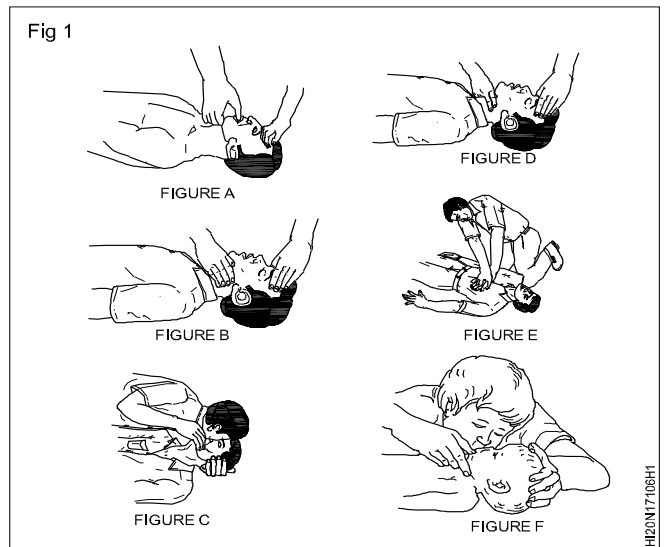
- 1 Trainees are advised to demonstrate some home remedies for toothache.
  - 2 Get it checked with the trainer.
- 

**TASK 7: Draw and label the parts of respiratory system**

- 1 Trainees are advised to sketch and label the parts of respiratory system.
  - 2 Get it checked with the trainer.
- 

**TASK 8: Demonstrate the upper respiratory tract infections, causes, symptoms and remedies**

- 1 Trainees are advised to demonstrate the upper respiratory tract infections, causes, symptoms and remedies using the reference image given below.
- 2 Get it checked with the trainer.



**Poisoning Case Managements**

**Objectives:** At the end of this exercise you shall be able to

- demonstrate the first aid steps in poisoning emergency
- demonstrate the tips for prevention of accidental poisoning in children
- demonstrate the methods to induce vomiting in victim who swallowed poison
- demonstrate the steps to be taken care during snake bite.

Requirements			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD projector	- 1 No.
• Pencil & pen	- as reqd.	• First Aid kit	- 2 Nos.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainees regarding the various poisoning case managements using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Demonstrate the first aid steps in poisoning emergency**

- 1 Trainees are advised to demonstrate the first aid steps in poisoning emergency as per the conditions given below in Table 1.
- 2 Get it checked with the trainer.

**Table 1 First Steps in poisoning emergency**

Sl.No	Inhaled poison	Swallowed	Poison on the skin	Poison on the eye
1				
2				
3				
4				
5				

**TASK 2: Demonstrate the tips for prevention of accidental poisoning in children**

- 1 Trainees are advised to demonstrate the tips for prevention of accidental poisoning in children for the image given below.
- 2 Get it checked with the trainer.

**Tips for prevention of accidental poisoning in children**

**Poison prevention! What to Do?**

- Use containers with child-resistant caps. These caps are child-resistant but they are not child proof.
- Keep chemicals and medicines out of reach and out of sight of children.
- Keep all products in their original containers.
- Paste the emergency contact number sticker of poison information centre near phone.

**Accidental poisoning in children**



**TASK 3: Demonstrate the methods to induce vomiting in victim who swallowed poison**

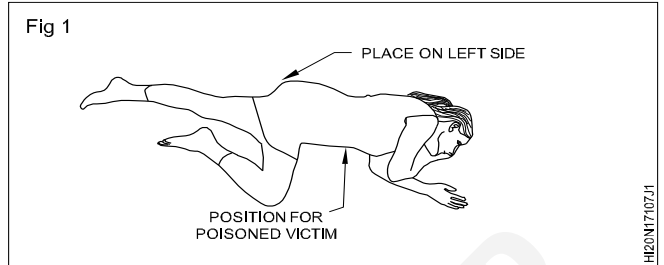
- 1 Trainees are advised to demonstrate the methods to induce vomiting in victim who swallowed poison.
- 2 Get it checked with the trainer.

**Poisoning**

- Methods to induce vomiting in victim who swallowed poison
- Vomiting induced is PCC recommends or if medical help is not available.
- Syrub of ipecac can be given to induce vomiting.
  - Medication to induce vomiting that is available in most drug stores.
  - Follow dosage recommended on bottle.

- Followed by glasses of water.
- Tickle back of victim's throat.
- Drink warm salt water.

**Induce vomiting in victim who swallowed poison**



-----

**TASK 4: Demonstrate the steps to be taken care during snake bite**

- 1 Trainees are advised to demonstrate five steps to be taken care during snake bite.
  - 2 Get it checked with the trainer.
-

## Management in case of heat attack, sun stroke, haemorrhage, burns, electrical injuries

**Objectives:** At the end of this exercise you shall be able to

- draw and label the parts of circulatory system
- demonstrate the warning signs of a heart attack
- demonstrate the first aid measures and steps to be taken care in an heart attack
- demonstrate the signs of sunstroke
- demonstrate the first aid measures during sunstroke
- demonstrate the prevention of sunstroke
- demonstrate the signs and symptoms of haemorrhage
- demonstrate the types of bleeding
- demonstrate the first aid measures for bleeding
- demonstrate the degrees of burn
- demonstrate the first aid measures of burn
- demonstrate the types of electrical injuries
- demonstrate the Do's and Don'ts's during electrical shock.

### Requirements

#### Tools/Instruments

- |                          |            |                 |          |
|--------------------------|------------|-----------------|----------|
| • Computer with internet | - as reqd. | • LCD projector | - 1 No.  |
| • Pencil & pen           | - as reqd. | • First Aid kit | - 2 Nos. |
| • A4 sheet               | - as reqd. |                 |          |

**Note:** Trainer will teach the trainees regarding the management in case of heat attack, sun stroke, haemorrhage, burns, electrical injuries using PPT an suitable demonstrations.

## PROCEDURE

### TASK 1: Draw and label the parts of circulatory system

- 1 Trainees are advised to sketch and label the parts of circulatory system.
- 2 Get it checked with the trainer.

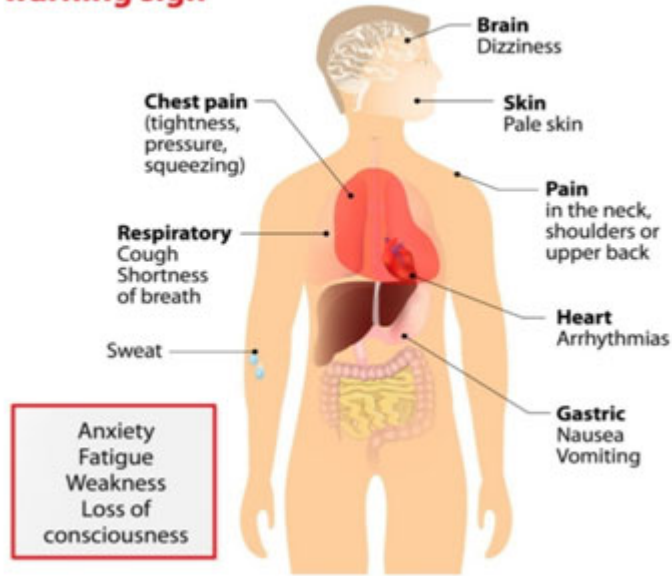
### TASK 2: Demonstrate the warning signs of a heart attack

- 1 Trainees are advised to demonstrate the warning signs of a heart attack based on the image given below.
- 2 Get it checked with the trainer.

**Warning signs of a heart attack. (Fig 1)**

Fig 1

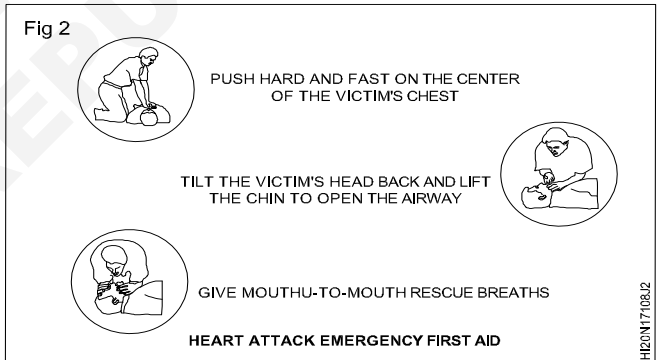
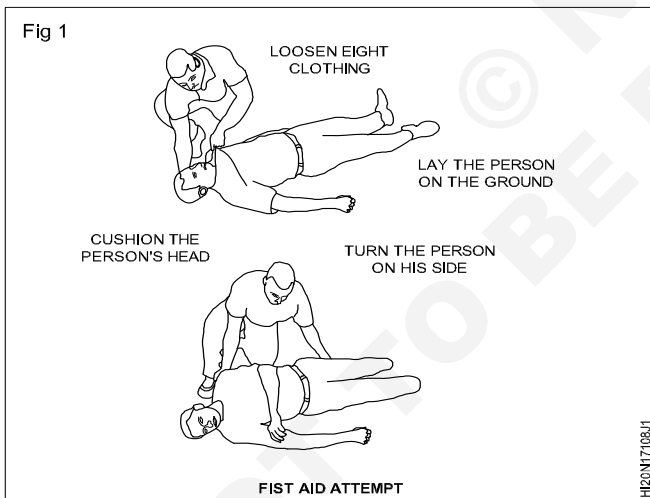
## HEART ATTACK warning sign



### TASK 3: Demonstrate the first aid measures and steps to be taken care in a heart attack

- 1 Trainees are advised to demonstrate the first aid measures and steps to be taken care in a heart attack using their fellow met as a model as per the given images Figs 2&3 respectively.
- 2 Get it checked with the trainer.

### Heart Attack Emergency First Aid

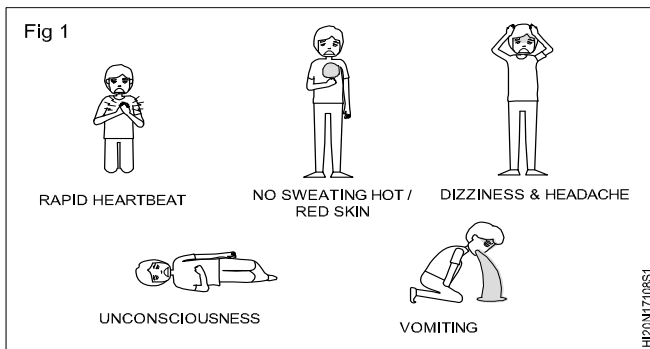


#### TASK 4: Demonstrate the signs of sunstroke

- 1 Trainees are advised to demonstrate the signs of sunstroke using the given image represented below.

- 2 Get it checked with the trainer.

#### Signs of sunstroke. (Fig 4)

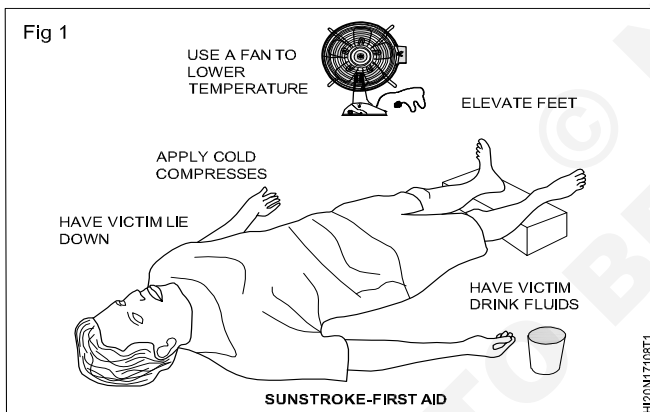


#### TASK 5: Demonstrate the first aid measures during sunstroke

- 1 Trainees are advised to demonstrate the first aid measures during sunstroke as per the given image represented below.

- 2 Get it checked with the trainer.

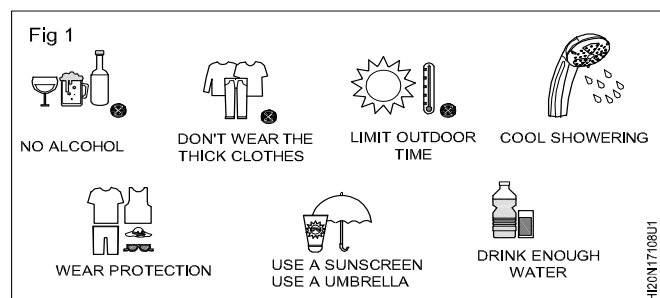
#### First aid measure during sunstroke. (Fig 5)



#### TASK 6: Demonstrate the prevention of sunstroke

- 1 Trainees are advised to demonstrate the prevention of sunstroke as per the given image represented below.
- 2 Get it checked with the trainer.

#### Prevention of sunstroke. (Fig 6)

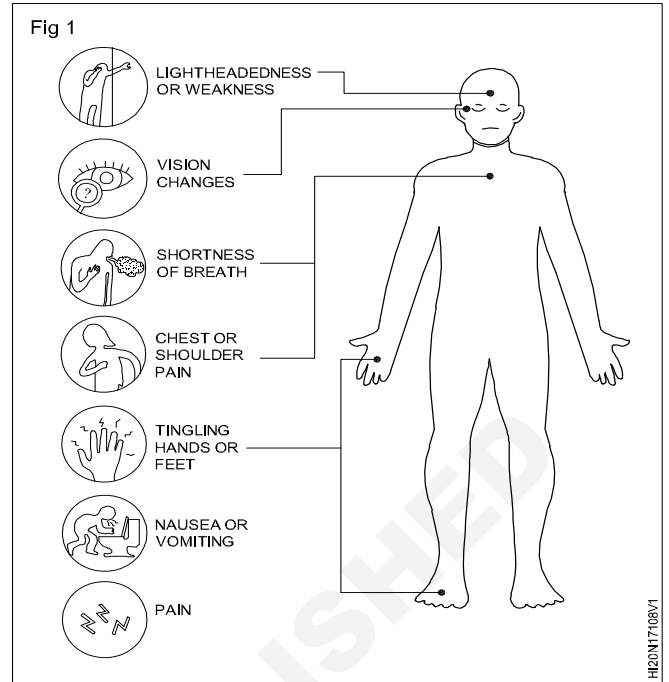




**TASK 7: Demonstrate the signs and symptoms of haemorrhage**

- 1 Trainees are advised to demonstrate the signs and symptoms of haemorrhage as per the given image represented below.
- 2 Get it checked with the trainer.

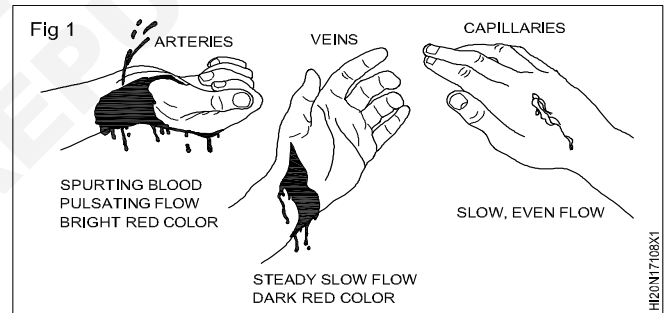
**Signs and symptoms of haemorrhage. (Fig 7)**



**TASK 8: Demonstrate the types of bleeding**

- 1 Trainees are advised to write and demonstrate the characteristics of the bleed based on its types under Table 1 using the below figure as a reference.
- 2 Get it checked with the trainer.

**Types of bleeding. (Fig 8)**



**Table 1 Characteristics of the bleed**

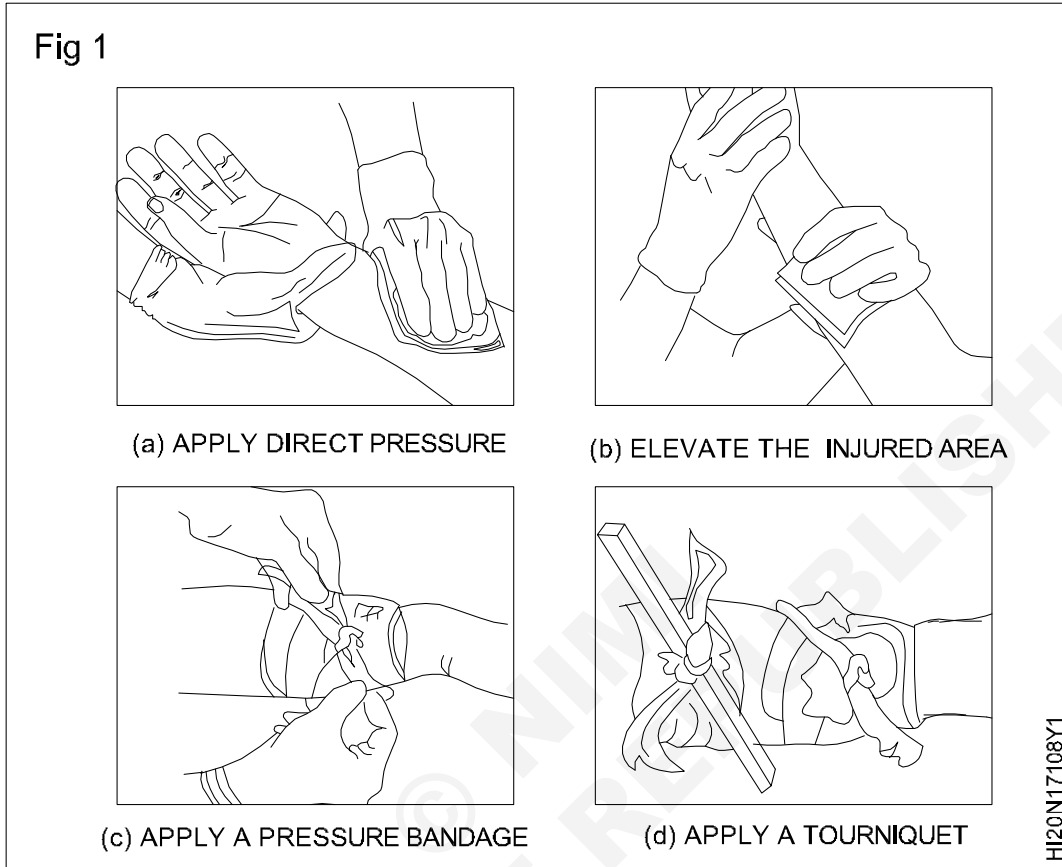
Sl.No	Type of bleeding	Characteristics associated with the type of bleed
1	Arteries	
2	Veins	
3	Capillaries	

**TASK 9: Demonstrate the first aid measures for bleeding**

- 1 Trainees are advised to demonstrate the first aid measures for bleeding as per the image represented below .
- 2 Get it checked with the trainer.

- a Apply direct pressure
- b Elevate the injured area.
- c Apply a pressure bandage
- d Apply a tourniquet

**First aid measures for bleeding. (Fig 9)**

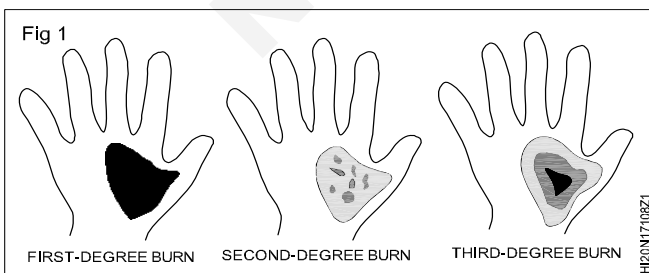


**TASK 10: Demonstrate the degrees of burn**

- 1 Trainees are advised to demonstrate the degrees of burn as per the given image represented below.
- 2 Get it checked with the trainer.

**Degrees of burn. (Fig 10)**

**Skin Burn**

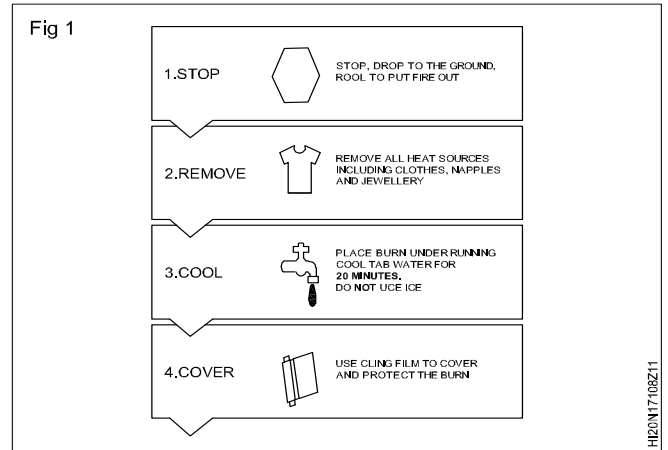


**TASK 11: Demonstrate the first aid measures of burn**

1 Trainees are advised to demonstrate the first aid measures of burn as per the given image represented below.

2 Get it checked with the trainer.

**First aid measures of burn. (Fig 11)**

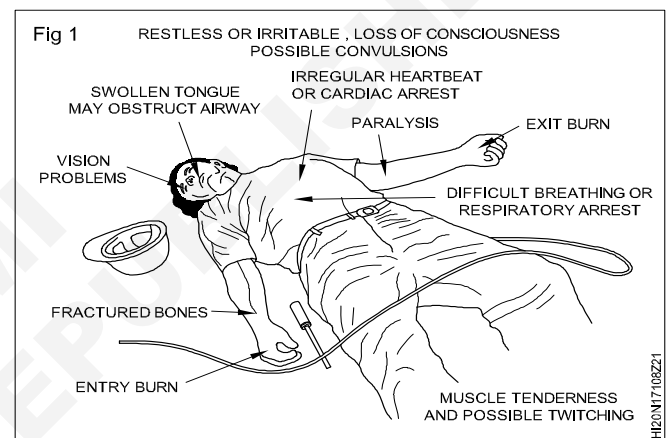


**TASK 12: Demonstrate the types of electrical injuries**

1 Trainees are advised to demonstrate the types of electrical injuries as per the given image represented below.

2 Get it checked with the trainer.

**Types of electrical injuries. (Fig 12)**



**TASK 13: Demonstrate the Do's and Don'ts during electrical shock**

1 Trainees are advised to write the Do's and Don'ts during electrical shock under the given Table 2.

2 Get it checked with the trainer.

**Table 2 Do's and Don'ts during electrical shock**

Sl.No	Do's	Don'ts
1		
2		
3		
4		
5		

**Training on artificial respiration**

**Objectives:** At the end of this exercise you shall be able to

- demonstrate the different methods of artificial respiration with a model.

Requirements			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD projector	- 1 No.
• Pencil & pen	- as reqd.	• First Aid kit	- 2 Nos.
• A4 sheet	- as reqd.		

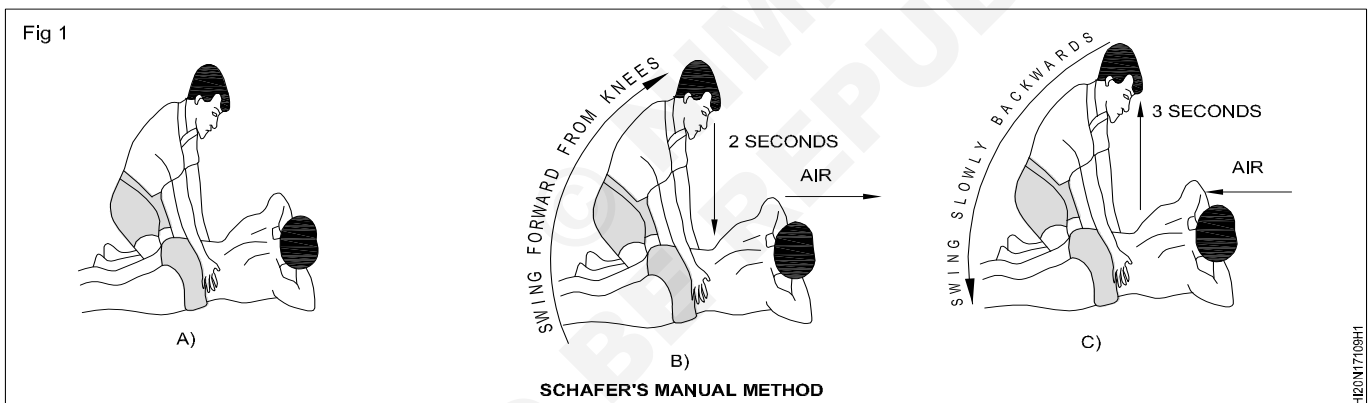
**Note:** Trainer will teach the trainees regarding the training on artificial respiration using PPT an suitable demonstrations.

**PROCEDURE**

**TASK 1: Demonstrate the Scahfer's method using a model**

- 1 Trainees are advised to demonstrate the Scahfer's method using a suitable model.
- 2 Get it checked with the trainer.

**Scahfer's Method. (Fig 1)**



**Steps to adapt**

- 1 The subject is laid in prone position and a small pillow is placed underneath the chest and epigastrium.
- 2 The head is turned to one-side. The operator kneels down by the side of the subject facing towards his head.
- 3 Two hands are placed on the two sides of the lower part of the chest and then the operator slowly puts his weight leaning forward and pressing upon the loins of the subject.
- 4 Intra-abdominal pressure raises. The diaphragm is pushed up and the air is forced out of the lungs.
- 5 After this the operator releases the pressure and comes back to his original erect position.
- 6 The abdominal pressure falls, diaphragm descends and air is drawn in. These moments are repeated about twelve times a minute.

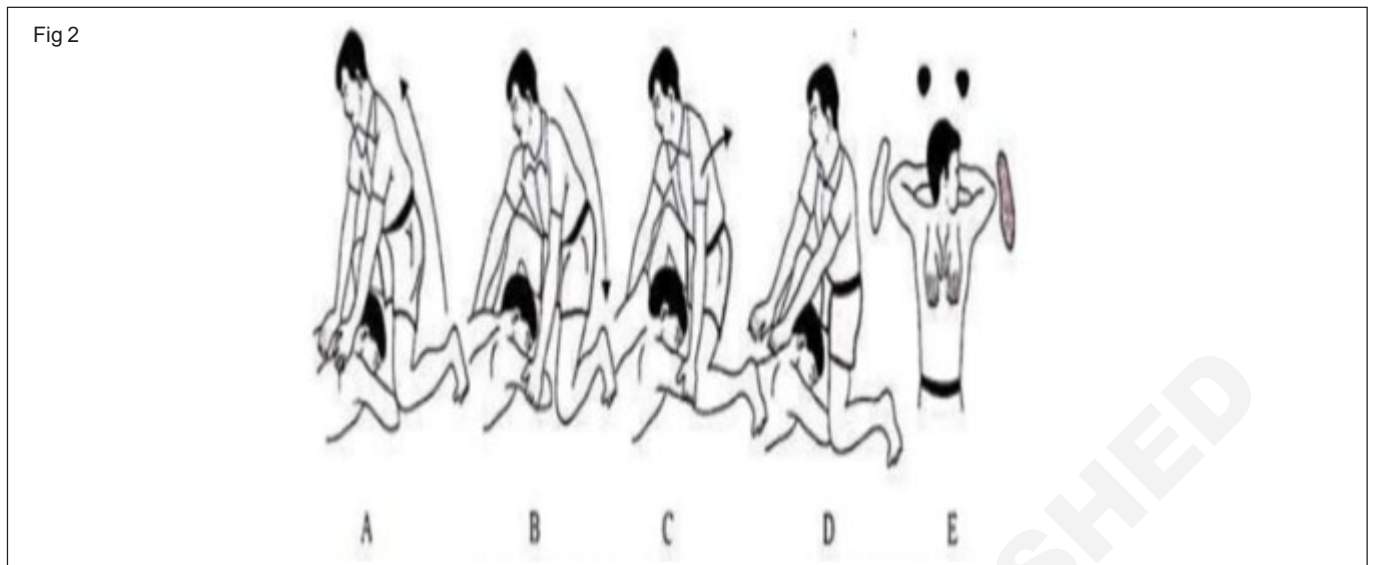
**Advantage of this method**

- 1 The patient being in the prone position, mucus or saliva comes out of the mouth and cannot obstruct his airways.

## TASK 2: Demonstrate the Holger -Nielson method using a model

- 1 Trainees are advised to demonstrate the Holger -Nielson method using a suitable model.
- 2 Get it checked with the trainer.

### Holger-Neilson Method. (Fig 2)



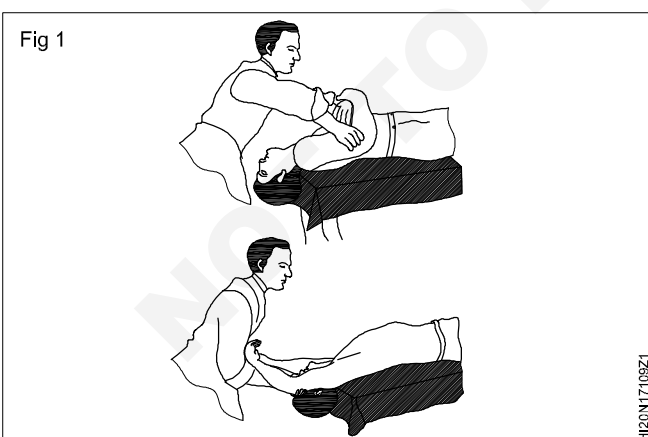
### Steps to adapt

- 1 The subject is placed in the prone position with the arms abducted at the shoulders and the elbows remaining flexed.
- 2 The face is turned to one-side and rest on the hands.
- 3 The mouth is cleaned after wiping out mucus, fluid etc. from it.
- 4 The operator kneels down in front of the subject facing towards the head.
- 5 Two hands are placed on the two sides of the back of the chest with the thumbs and fingers spread apart.
- 6 Then the operator puts his body weight leaning forwards upon the subject's back. This compresses the chest and helps in expiration.
- 7 The subject's arms forwards by holding them above the elbows. This helps in natural inspiration.
- 8 This process is repeated about 10-12 times.

## TASK 3: Demonstrate the Sylvester's method using a model

- 1 Trainees are advised to demonstrate the Sylvester's method using a suitable model.
- 2 Get it checked with the trainer.

### Sylvester's Method. (Fig 3)



### Steps to adapt

- 1 The subject is placed in supine position. The operator stands or kneels at the head end and holds the two arms of the subject.
- 2 The operator then raises the subject's hands above his head and then folds the hands back upon the chest, compressing the chest wall at the same time.

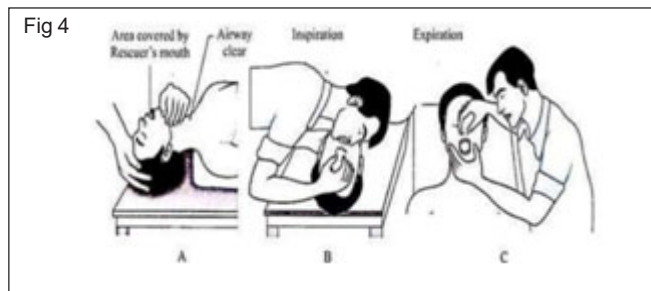
- 3 Such movements alternately increase and decrease the thoracic cavity, thus drawing in and pushing out air from the lungs.
- 4 The tongue should be kept and pulled out and the mucus from the mouth cavity should be wiped out.

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### TASK 4: Demonstrate the Mouth-to -Mouth method

- 1 Trainees are advised to demonstrate the Mouth-to -Mouth using a suitable model.
- 2 Get it checked with the trainer.

### Mouth-to -Mouth. (Fig 4)



### Steps to adapt

- 1 Make sure the person lying on a hard, flat surface.
- 2 Look into the mouth and throat to ensure that the airway is clear.

- 3 Tilt the head back slightly to open the airway, put upward pressure on the jaw to pull it forward.
- 4 Pinch the nostrils closed with thumb and index finger.
- 5 Place your mouth tightly over the person's mouth.
- 6 Blow to quick breath's and watch for person's chest to raise.
- 7 Release the nostrils. Look for the person's chest to fall as he or she exhales
- 8 Listen for the sounds of breathing.
- 9 If the person doesn't start breathing on his or her own, repeat the procedure.

**Arranging first aid treatment in various emergency cases**

**Objectives:** At the end of this exercise you shall be able to

- demonstrate the content of the first aid kit
- demonstrate the first aid management in Asphyxia
- demonstrate the first aid management in case of drowning
- demonstrate the first aid management in suffocation of poisonous gases
- demonstrate the first aid measures in shock
- demonstrate first aid measures to wound
- demonstrate first aid measures to soft tissues
- identify the injuries
- demonstrate the Do's and Don'ts during first aid.

Requirements			
Tools/Instruments			
• Computer with internet	- as reqd.	• LCD projector	- 1 No.
• Pencil & pen	- as reqd.	• First Aid kit	- 2 Nos.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainees regarding the arrangement of first aid treatment in various emergency cases using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Demonstrate the content of the first aid kit**

- 1 Trainees are advised to take up a first aid box and note down the different things that has to be kept inside the first aid box as per the given Table 1 and prepare the same for a demo.
- 2 Get it checked with the trainer.

**Table 1 First aid box content**

SI.No	Dressing	Medications	Equipment's	Others
1				
2				
3				
4				
5				

**TASK 2: Demonstrate the first aid management in Asphyxia**

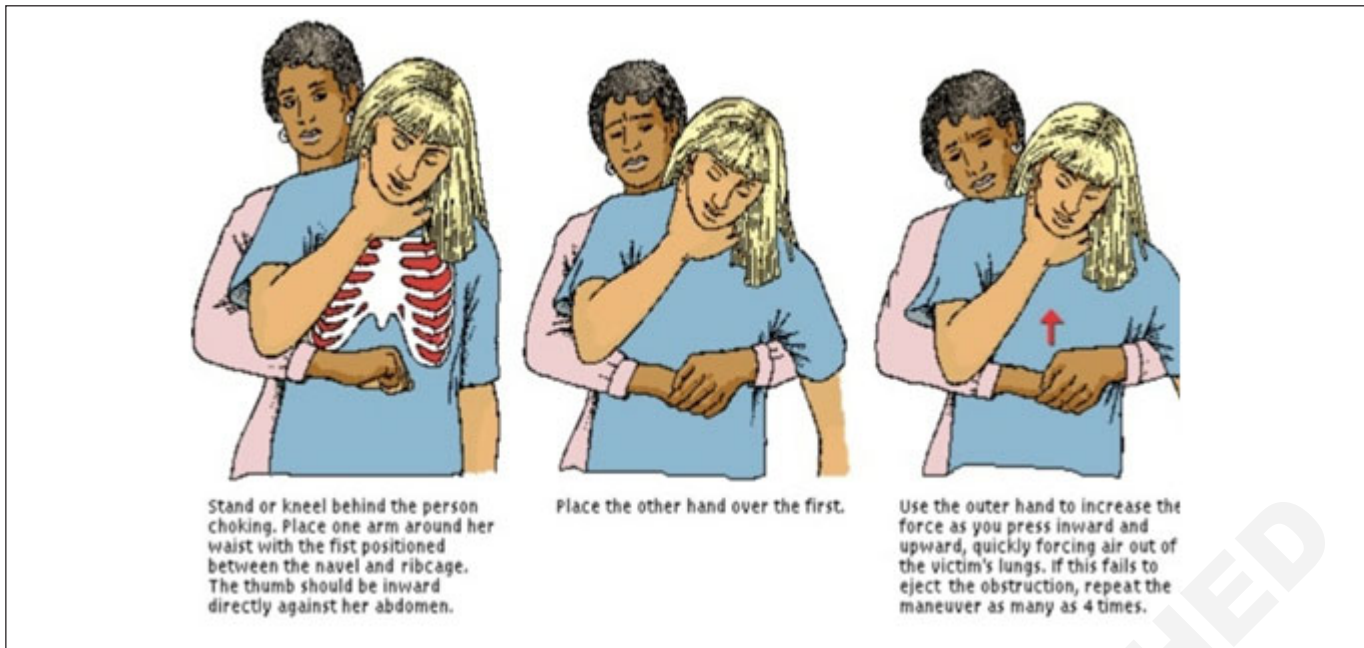
- 1 Trainees are advised to demonstrate the Heimlich maneuver and CPR technique.
- 2 Place the other hand over the first.
- 2 Get it checked with the trainer.
- 3 Use the outer hand to increase the force as you press inward and upward, quickly forcing air out of the victim's lungs. If this fails to eject the obstruction, repeat the maneuver as many as 4 times.

**Heimlich maneuver technique**

**Steps to follow**

- 1 Stand or kneel behind the person choking. Place one arm around her waist with the fist positioned between the navel and ribcage. The thumb should be inward directly against her abdomen.

**Note:** For CPR technique, please refer the Exercise No.119



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**TASK 3: Demonstrate the first aid management in case of drowning**

- 1 Trainees need to demonstrate the Schafer's method as given in the Exercise No. 123.
- 2 Get it checked with the trainer.

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**TASK 4: Demonstrate the first aid management in suffocation of poisonous gases**

- 1 Trainees need to demonstrate the first aid methods given below.
- 2 Get it checked with the trainer.
- 3 Before entering the enclosed space, take two or three deep breath and hold your breath as long as you can.
- 4 Crawl along the floor.
- 5 Remove the casualty as quickly as possible to the fresh air.
- 6 Loosen his clothes at neck and waist and give artificial respiration, is asphyxiated.

**First aid practices**

- 1 Remove the person from the area, applying artificial respiration and giving pure oxygen if available.
- 2 Ensure circulation of fresh air before entering the room by opening the doors and windows.

-----

**TASK 5: Demonstrate the first aid measures in shock**

- 1 Trainees are advised to demonstrate the first aid measures for shock.
- 2 Get it checked with the trainer.
- 4 Put breathing, and responsive victim in recovery position.
- 5 Loosen any tight clothing.
- 6 Never give the victim anything to eat or drink.
- 7 Eating or drinking could cause vomiting.
- 8 Reassure the victim.

**First aid for shock**

- 1 Call any local emergency number.
- 2 Control any external bleeding.
- 3 Have victim lie on back and raise legs so that feet are six to twelve inches above the ground. This helps the blood return to the heart.

-----

**TASK 6: Demonstrate first aid measures to wound**

- 1 Trainees are advised to demonstrate first aid measures to wound based on the image given below.





**TASK 7: Demonstrate first aid measures to soft tissues**

- 1 Trainees are advised to demonstrate first aid measures to soft tissues.
- 2 Get it checked with the trainer.

**First aid measures to soft tissues**




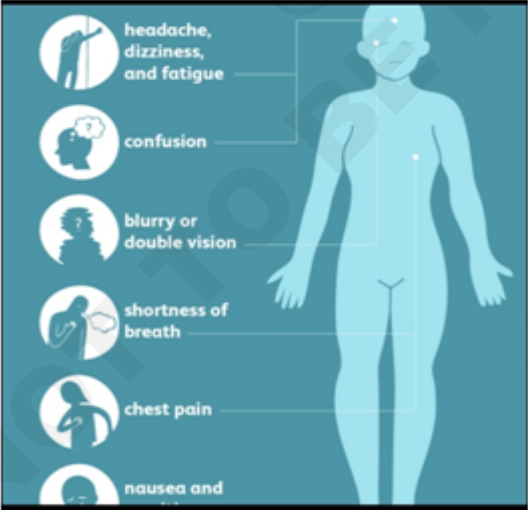







**TASK 8: Identify the injuries and demonstrate the same**

- 1 Trainees are advised to identify and write down the name of the injuries based on the given images under given Table 2.
- 2 Get it checked with the trainer.

**Table 2 Identify the name of the injuries**

Sl.No	Identify the injury	Name of the injury
1		
2		

SI.No	Identify the injury	Name of the injury
3		
4		
5		
6		
7		

SI.No	Identify the injury	Name of the injury
8		
9		
10		
11		

**TASK 9: Demonstrate the Do's and Don'ts during first aid**

- 1 Trainees are advised to write down the Do's and Don'ts during first aid under given Table 3.
- 2 Get it checked with the trainer.

**Table 3 Do's and Don'ts during first aid**

SI.No	Do's	Don't's
1		
2		
3		
4		
5		

**Demonstration on communicable and non-communicable diseases, symptoms and their control measures**

**Objectives:** At the end of this exercise you shall be able to

- list down ten communicable and non-communicable diseases
- Identify the mode of transmission for the given diseases
- demonstrate the causative organism, mode of transmission, organs affected and symptoms for the given diseases
- demonstrate the transmission cycle of malaria
- draw a pie-chart using the given data
- identify the type of pathogens using the given images
- demonstrate the hyper-tension stages
- identify the odd type of pathogen by seeing the image and demonstrate the same
- demonstrate the symptoms of diabetes mellitus
- demonstrate the types of heart disease
- demonstrate the prevention of communicable diseases by seeing the image
- demonstrate the difference between communicable diseases and non-communicable diseases
- demonstrate the control and preventive measures of non-communicable diseases by seeing the image.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainees regarding the communicable and non-communicable diseases, symptoms and their control measures using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: List down ten communicable and non-communicable diseases**

- 1 Trainees are advised to list down ten communicable and non-communicable diseases under the given Table 1.
- 2 Get it checked with the trainer.

**Table 1 Communicable and Non-communicable diseases**

<b>Sl.No</b>	<b>Communicable diseases</b>	<b>Non-communicable diseases</b>
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

**TASK 2: Identify the mode of transmission for the given diseases**

- 1 Trainees are advised identify the mode of transmission for the given diseases under the given Table 2.
- 2 Get it checked with the trainer.

**Table 2 Mode of transmission for the given diseases**

SI.No	Disease	Mode of transmission
1	Influenza, Whooping cough	
2	Hookworm, tetanus	
3	Varicella virus, syphilis, hepatitis	
4	Typhoid, cholera	
5	Hepatitis B, Malaria	
6	Cytomegalo virus	

**TASK 3: Demonstrate the causative organism, mode of transmission, organs affected and symptoms for the given diseases**

- 1 Trainees are advised to write down the causative organism, mode of transmission, organs affected and symptoms for the given diseases under the given Table 3.
- 2 Get it checked with the trainer.

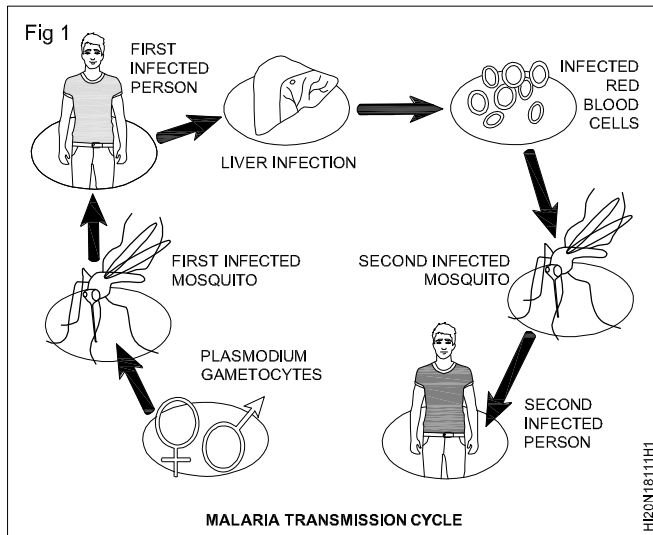
**Table 3 Causative organism, mode of transmission, organs affected and symptoms for the given diseases**

SI.No	Disease	Causative organism	Mode of transmission	Organs affected	Symptoms
1	Tuberculosis				
2	Diphtheria				
3	Whooping cough				
4	Pneumonia				
5	Poliomyelitis				
6	Mumps				
7	Measles, chicken pox				
8	Cholera				
9	Amebiosis				
10	E.Coli				
11	Giardiasis				
12	Typhoid				
13	Hepatitis A				

**TASK 4: Demonstrate the transmission cycle of malaria**

- 1 Trainees are advised to demonstrate the transmission cycle of malaria by seeing the image.
- 2 Get it checked with the trainer.

**Transmission cycle of Malaria**



**TASK 5: Draw a pie-chart using the given data**

- 1 Trainees are advised to draw a pie-chart using the given data represented in the Table 4.
- 2 Get it checked with the trainer.

**Table 4 Data**

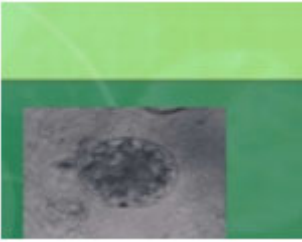

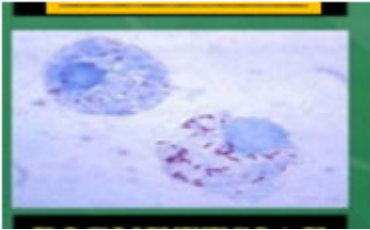

Sl.No	Conditions	Percentage
1	Injuries	9
2	Cardiovascular diseases	30
3	Cancer	13
4	Diabetes	2
5	Other chronic diseases	2
6	Chronic respiratory diseases	7
7	Other conditions	30

**TASK 6: Identify the type of pathogens using the given images**

- 1 Trainees are advised to identify the type of pathogens using the given images represented below.
- 2 Get it checked with the trainer.

**Table 5 Type of pathogens**

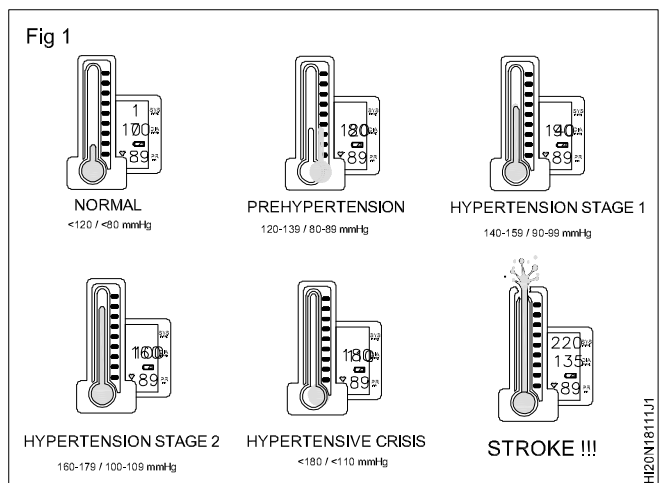
Sl.No	Images	Type of pathogen
1		
2		

SI.No	Images	Type of pathogen
3		
4		
5		
6		

**TASK 7: Demonstrate the hyper-tension stages**

- 1 Trainees are advised to demonstrate the hyper-tension stages as per the given image represented below.
- 2 Get it checked with the trainer.

**Hypertension stages**

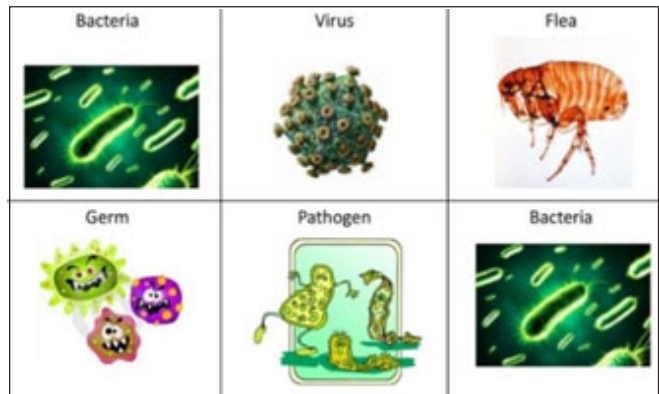


**TASK 8: Identify the odd type of pathogen by seeing the image and demonstrate the same**

- 1 Trainees are advised to write about what a pathogen is and what we meet by infectious diseases.
- 2 Demonstrate how diseases are spread.
- 3 Get it checked with the trainer.

**Odd one out**

Select an odd one out from each line.

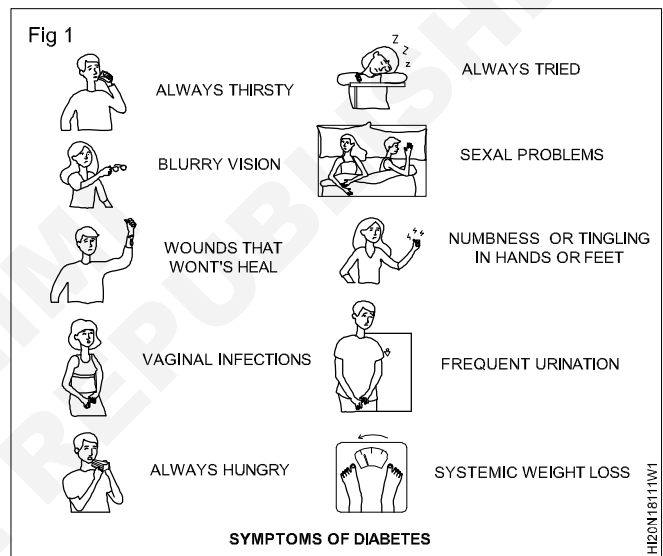


**TASK 9: Demonstrate the symptoms of diabetes mellitus**

- 1 Trainees are advised to demonstrate the symptoms of diabetes mellitus as per the given image represented below.
- 2 Get it checked with the trainer.

**Symptoms of diabetes**

**Diabetes mellitus**

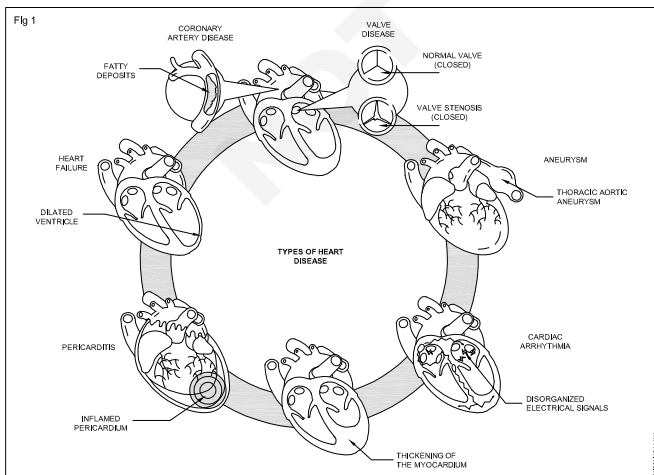


**TASK 10: Demonstrate the types of heart disease**

- 1 Trainees are advised to demonstrate the types of heart disease as per the given image represented below.

- 2 Get it checked with the trainer.

**Types of heart disease**





**TASK 11: Demonstrate the prevention of communicable diseases by seeing the image**

- 1 Trainees are advised to demonstrate the prevention of communicable diseases as per the given image represented below.
- 2 Get it checked with the trainer.

**Prevention of communicable diseases**



**TASK 12: Demonstrate the difference between communicable diseases and non-communicable diseases**

- 1 Trainees are advised to demonstrate the differences between communicable and non-communicable diseases under Table 6.
- 2 Get it checked with the trainer.

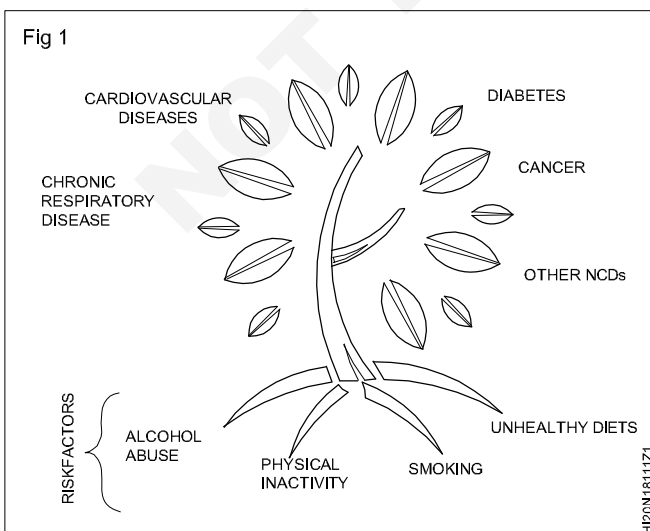
**Table 6 Communicable and Non-communicable diseases**

SI.No	Communicable diseases	Non-communicable diseases
1		
2		
3		
4		
5		

**TASK 13: Demonstrate the control and preventive measures of non-communicable diseases by seeing the image**

- 1 Trainees are advised to demonstrate the control and preventive measures of non-communicable diseases as per the given image represented below.
- 2 Get it checked with the trainer.

**Prevention of non-communicable diseases**



## Preparation of immunization programme

**Objectives:** At the end of this exercise you shall be able to

- demonstrate the national immunization schedule
- demonstrate some examples for the types of vaccines listed below
- demonstrate the ten most important vaccines
- draw a poster on explaining the importance of immunization
- demonstrate the difference between innate immunity and adapted immunity.

### Requirements

#### Tools/Instruments

- Computer with internet - as reqd.
- Pencil & pen - as reqd.
- A4 sheet - as reqd.
- LCD projector - 1 No.

**Note:** Trainer will teach the trainees regarding the preparation of immunization programme using PPT and suitable demonstrations.

## PROCEDURE

### TASK 1: Demonstrate the national immunization schedule

- 1 Trainees are advised to demonstrate the national immunization schedule as per the chart given below under Table 1.
- 2 Get it checked with the trainer.

**Table 1 Vaccination schedule**

Sl.No	Vaccine	When to give	Dose	Route	Site
For infants					
1	BCG				
2	Hepatitis B Birth Dose				
3	OVP Birth Dose				
4	OVP 1,2 & 3				
5	IVP				
6	Pentavelant 1, 2 & 3				
7	Rotavirus				
8	Measles 1 <sup>st</sup> dose				
9	Vitamin A 1 <sup>ST</sup> Dose				
For children					
1	DPT 1 <sup>st</sup> Booster				
2	OPV Booster				
3	Measles 2 <sup>nd</sup> Dose				
4	Vitamin A 2 <sup>nd</sup> to 9 <sup>th</sup> Dose				
5	DPT 2 <sup>nd</sup> Booster				
6	TT				

**TASK 2: Demonstrate some examples for the types of vaccines listed below**

- 1 Trainees are advised to demonstrate some examples for the types of vaccines listed below under Table 2.
- 2 Get it checked with the trainer.

**Table 2 Types of vaccines**

SI.No	Types of vaccines	Examples
1	Live, attenuated vaccine	
2	Inactivated vaccines	
3	Sub-unit vaccines	
4	Toxoid vaccines	
5	Conjugate vaccines	
6	DNA vaccines	
7	Recombinant vector vaccines	

**TASK 3: Demonstrate the ten most important vaccines**

- 1 Trainees are advised to list down the ten important vaccines and demonstrate the same.
- 2 Get it checked with the trainer.

**TASK 4: Draw a poster on explaining the importance of immunization**

- 1 Trainees are advised to sketch a poster on explaining the importance of immunization.
- 2 Get it checked with the trainer.

**TASK 5: Demonstrate the difference between innate immunity and adapted immunity**

- 1 Trainees are advised to differentiate the features between innate immunity and adapted immunity under the given Table 3.
- 2 Get it checked with the trainer.

**Table 3 Differences between innate immunity and adapted immunity**

SI.No	Features	Innate immunity	Adapted immunity
1	Definition		
2	Components		
3	Speed of response		
4	Potency		
5	Specificity		
6	Presence		
7	Memory		
8	Development		

**Conducting health and general survey and report making**

**Objectives:** At the end of this exercise you shall be able to

- prepare a detailed report based on the specific health survey related questions
- prepare a detailed report based on the general health survey related questions .

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainees regarding the conducting health and general survey using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Preparation of detailed report based on the specific health survey questionnaire**

- 1 Trainees are advised to take up the top 15 health survey related questionnaire found below, analyze the results and prepare a detailed report and demonstrate the same.
  - 2 Get it checked with the trainer.
- Specific Health survey related questionnaire**
- 1 On a scale of 1 to 10, how healthy do you consider yourself?  
Ans:
  - 2 Do you currently suffer from any chronic diseases?
    - Yes
    - No
  - 3 Do you have any hereditary conditions/diseases?
    - High blood pressure
    - Diabetes
    - Hemophilia
    - Thalassemia
    - Huntington
    - Other (Please specify)
  - 4 Are you habituated to drugs and alcohol?
    - Yes to both
    - Only to drugs
    - Only to alcohol
    - I am not habituated to either
  - 5 How often do you get a health checkup?
    - Once in 3 months
    - Once in 6 months
    - Once a year
    - Only when needed
    - Never get it done
    - Other
  - 6 Overall, how do you rate the local hospitals in your area?
    - Excellent
    - Above average
    - Average
    - Below average
    - Very poor
  - 7 How would you evaluate your overall health? Would you say you are:
    - In good physical health (No illness or disabilities).
    - Mildly physically impaired. (Minor illness or disabilities)
    - Moderately physically impaired. (Requires substantial treatment)
    - Severely physically impaired. (Requires extensive treatment)
    - Totally physically impaired. (Confined to bed)

- 8 In your opinion, at what capacity can you perform everyday activities?
- Excellent capacity
  - Good capacity
  - Moderate capacity
  - Severely impaired capacity
  - Completely impaired capacity
- 9 In the past 24 hours, what different kinds of medications have you taken?
- 10 How many medications have been prescribed by your physician that you have taken in the last 24 hours?
- 1
  - 2
  - 3
  - 4
  - 5
  - More than 5
  - None
- 11 In the last 24 hours, how did you take your medicine?
- Without help (in the right dosage and right time)
  - With some help (someone prepares the medicine or reminds you to take it)
  - Completely unable to take it
  - Other
- 12 Which health insurance coverage provider are you currently enrolled with?
- Medicaid
  - Medicare
  - Affordable Care Act
  - Uninsured
  - Private health insurance
  - Other (Please specify)
- 13 Please state your level of agreement to the statement: Health insurance is affordable to you.
- Completely Disagree
  - Somewhat Disagree
  - Neutral
  - Somewhat Agree
  - Completely Agree
- 14 Have any of your family members been dropped out of coverage after a diagnosis of any illness?
- Yes
  - No
- 15 Has a lack of health insurance coverage made you consider one of the following?
- Skip a doctor's appointment
  - Cancel an appointment with the doctor
  - Postpone a doctor's appointment
  - Not purchase medicine
  - Delay treatment
  - N/A
- 16 How would you rate the diagnosis process that you experienced?
- Excellent
  - Above average
  - Average
  - Below average
  - Very poor
- 17 Overall, how do you rate us as compared to other local hospitals in your area?
- Excellent
  - Above average
  - Average
  - Below average
  - Very poor
- 18 How would you rate our ambulance service?
- Excellent
  - Good
  - Average
  - Poor

-----

**TASK 2: Preparation of detailed report based on the general health survey questionnaire**

- 1 Trainees are advised to take up the top 15 health survey related questionnaire found below, analyze the results and prepare a detailed report .
- 2 Get it checked with the trainer.

**General Health Survey Questionnaire**

- 1 How easy was it to schedule an appointment at our facility?
- 2 How long did you wait beyond your appointment time to be seen by a provider?

- 3 How well do you feel the provider listened to your health concerns?
4. Please rate how thorough you feel the provider's instructions for care were addressed
- 5 How well do you feel the provider answered your questions?
- 6 How was our pharmacy staff?
- 7 How satisfied are you with the cleanliness of our facility?
- 8 How would you rate the overall care you received from your provider?
- 10 How likely are you to recommend our facility to your friends and family?
- 11 Has any of your family members been dropped out of coverage after a diagnosis of any illness?
- 12 Is your primary health care physician able to conduct a swift diagnosis and prescribe medication?
- 13 Did the pharmacy staff collect the right deductible from you for your medicines?
- 14 What is the difference in the care provided by the hospitals available in your area?
- 15 In general, would you say your health is .....

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**Videos on disinfection and sterilization techniques**

**Objectives:** At the end of this exercise you shall be able to

- observe the audio and video aids for various disinfection and sterilization techniques
- demonstrate the same.

**Requirements****Tools/Instruments**

- |                          |            |
|--------------------------|------------|
| • Computer with internet | - as reqd. |
| • Pencil & pen           | - as reqd. |
| • A4 sheet               | - as reqd. |
| • LCD projector          | - 1 No.    |

**Note:** Trainer will teach the trainees regarding the conducting health and general survey using PPT and suitable demonstrations.

Link 1: <https://youtu.be/UN6xDdxL3rY>

Link 2: <https://youtu.be/0dIDfBHiiQw>

Link 3: [https://youtu.be/JUp4n\\_r5s2w](https://youtu.be/JUp4n_r5s2w)

**Various chemicals uses with safety for disinfection through videos**

**Objectives:** At the end of this exercise you shall be able to

- observe the audio and video aids for various chemicals uses with safety for disinfection through videos
- demonstrate the same.

**Requirements****Tools/Instruments**

- |                          |            |
|--------------------------|------------|
| • Computer with internet | - as reqd. |
| • Pencil & pen           | - as reqd. |
| • A4 sheet               | - as reqd. |
| • LCD projector          | - 1 No.    |

**Note:** Trainer will teach the trainees regarding the conducting health and general survey using PPT and suitable demonstrations.

Link 1: <https://youtu.be/UHaBLTr7X-E>

Link 2: [https://youtu.be/UVFC\\_DaBrkk](https://youtu.be/UVFC_DaBrkk)

Link 3: <https://youtu.be/IEKoDAFCPz4>



**Making posters on dental care**

- Objectives:** At the end of this exercise you shall be able to
- design a poster on how to improve your dental health
  - design a poster on sequence of brushing your teeth
  - design a poster on common dental problems.

**Requirements**

**Tools/Instruments**

- |                          |            |
|--------------------------|------------|
| • Computer with internet | - as reqd. |
| • Pencil & pen           | - as reqd. |
| • A4 sheet               | - as reqd. |
| • LCD projector          | - 1 No.    |

**Note: Trainer will teach the trainees regarding the dental care using PPT and suitable demonstrations.**

**PROCEDURE**

**TASK 1: Design a poster on how to improve your dental health**

- |   |                                    |
|---|------------------------------------|
| 1 Trainees are advised to design a poster on how to improve your dental health. | 2 Get it checked with the trainer. |
|---|------------------------------------|
- 

**TASK 2: Design a poster on sequence of brushing your teeth**

- |   |                                    |
|---|------------------------------------|
| 1 Trainees are advised to design a poster on sequence of brushing your teeth. | 2 Get it checked with the trainer. |
|---|------------------------------------|
- 

**TASK 3: Design a poster on common dental problems**

- |  |                                    |
|--|------------------------------------|
| 1 Trainees are advised to design a poster on common dental problems. | 2 Get it checked with the trainer. |
|--|------------------------------------|
-

**Making posters on skin and hair hygiene**

**Objectives:** At the end of this exercise you shall be able to

- design a poster on hair and scalp problems
- design a poster on hair care tips
- design a poster on various skin problems
- design a poster on skin care.

**Requirements**

**Tools/Instruments**

- |                          |            |
|--------------------------|------------|
| • Computer with internet | - as reqd. |
| • Pencil & pen           | - as reqd. |
| • A4 sheet               | - as reqd. |
| • LCD projector          | - 1 No.    |

**Note: Trainer will teach the trainees regarding the dental care using PPT and suitable demonstrations.**

**PROCEDURE**

**TASK 1: Design a poster on hair and scalp problems**

- |   |                                    |
|---|------------------------------------|
| 1 Trainees are advised to design a poster on hair and scalp problems. | 2 Get it checked with the trainer. |
|---|------------------------------------|

**TASK 2: Design a poster on hair care tips**

- |  |                                    |
|--|------------------------------------|
| 1 Trainees are advised to design a poster on hair care tips. | 2 Get it checked with the trainer. |
|--|------------------------------------|

**TASK 3: Design a poster on various skin problems**

- |   |                                    |
|---|------------------------------------|
| 1 Trainees are advised to design a poster on various skin problems. | 2 Get it checked with the trainer. |
|---|------------------------------------|

**TASK 4: Design a poster on skin care**

- |   |                                    |
|---|------------------------------------|
| 1 Trainees are advised to design a poster on skin care. | 2 Get it checked with the trainer. |
|---|------------------------------------|

**Making posters on basic hygiene habits**

**Objectives:** At the end of this exercise you shall be able to  
• **design a poster on different hygiene habits.**

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainees regarding the basic hygiene habits using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Design a poster on the following basic hygiene habits**

- 1 Trainees are advised to design a poster on the following basic hygiene habits
    - Dental hygiene
    - Shower hygiene
    - Toilet hygiene
    - Nail hygiene
    - Sickness hygiene
    - Hand hygiene
  - 2 Get it checked with the trainer
-

**Demonstration on right method for hand washing**

**Objectives:** At the end of this exercise you shall be able to

- demonstrate the correct way of hand washing by seeing the image.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note: Trainer will teach the trainees regarding the basic hygiene habits using PPT and suitable demonstrations.**

**PROCEDURE**

**TASK 1: Demonstrate the correct way of hand washing by seeing the image**

- 1 Trainees are advised to demonstrate the correct way of hand washing by seeing the image given below. **Right method of hand washing**
- 2 Get it checked with the trainer.



**Demonstration on oral health**

**Objectives:** At the end of this exercise you shall be able to

- demonstrate the steps to brush your teeth
- demonstrate the flossing technique
- design a poster on dental caries prevention.

**Requirements**

**Tools/Instruments**

- |                          |            |
|--------------------------|------------|
| • Computer with internet | - as reqd. |
| • Pencil & pen           | - as reqd. |
| • A4 sheet               | - as reqd. |
| • LCD projector          | - 1 No.    |

**Note:** Trainer will teach the trainees regarding the importance of oral hygiene using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Demonstrate the steps to brush your teeth**

- 1 Trainees are advised to demonstrate the steps to brush the teeth using the images given below.
- 2 Get it checked with the trainer.

Step 1:

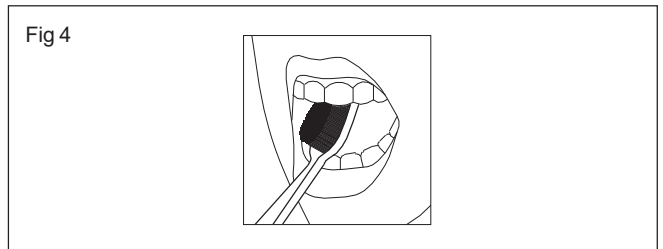
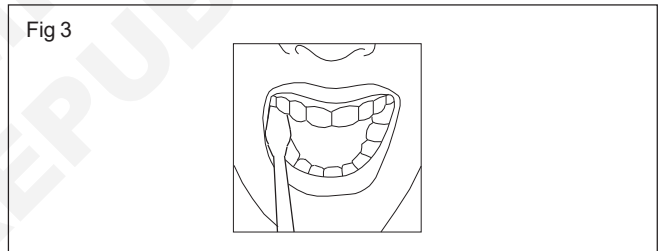
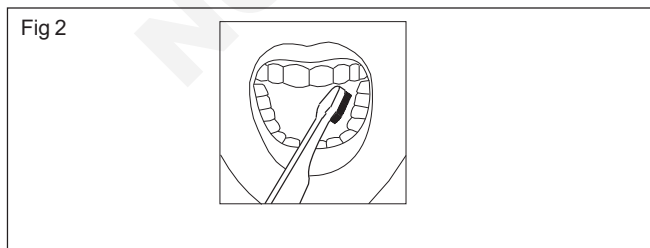
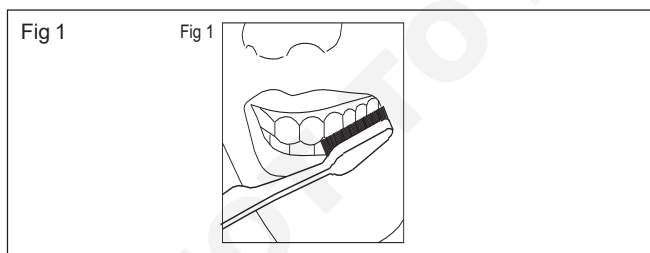
Step 2:

Step 3:

Step 4:

Step 5:

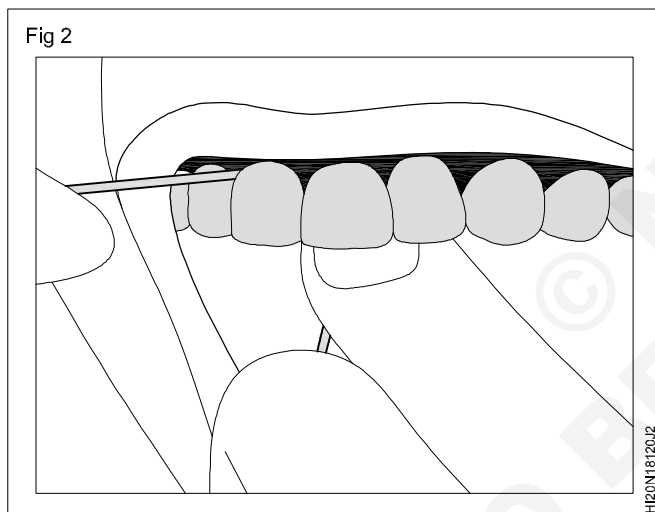
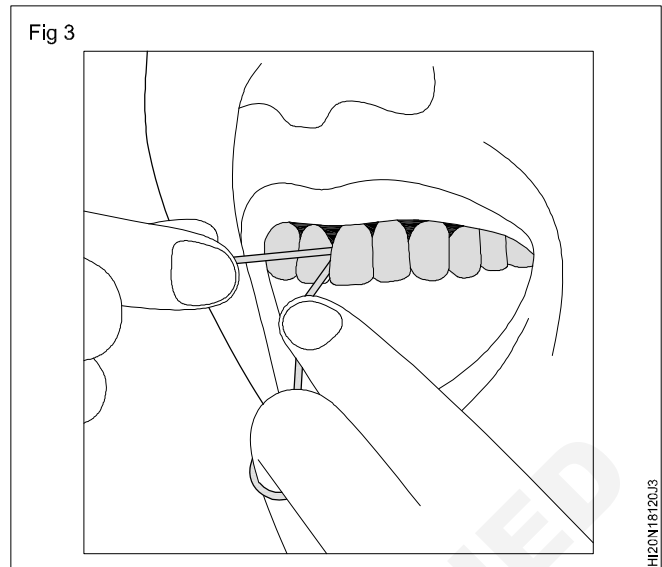
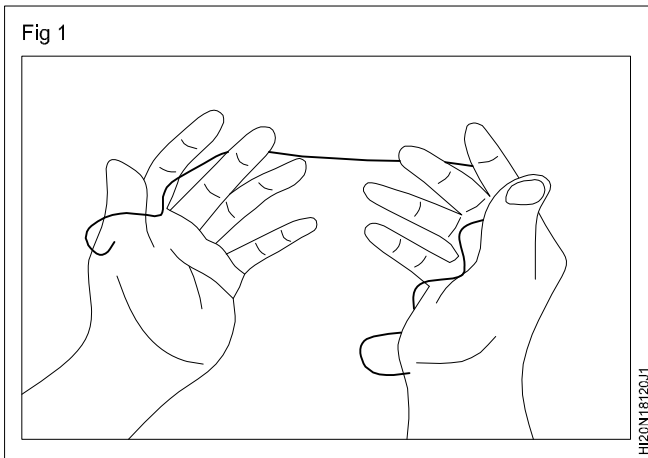
**Brushing teeth**



**TASK 2: Demonstrate the flossing technique**

- 1 Trainees are advised to write the steps involved in the flossing technique by referring the given images below.
- 2 Get it checked with the trainer.

**Step 1**



**TASK 3: Design a poster on dental caries prevention**

- 1 Trainees are advised to design a poster on prevention of dental caries and demonstrate the same.
- 2 Get it checked with the trainer.

## Data collection from hospitals from malaria cases

**Objectives:** At the end of this exercise you shall be able to

- demonstrate the types of collection methods for malaria cases
- collect data from hospitals and prepare a detailed report as per the guidelines provided in the chart.

### Requirements

#### Tools/Instruments

- |                          |            |
|--------------------------|------------|
| • Computer with internet | - as reqd. |
| • Pencil & pen           | - as reqd. |
| • A4 sheet               | - as reqd. |
| • LCD projector          | - 1 No.    |

**Note:** Trainer will teach the trainees regarding the data collection from hospitals from malaria cases using PPT and suitable demonstrations.

## PROCEDURE

### TASK 1: Demonstrate the types of collection methods for malaria cases

- |  |   |
|--|---|
| 1 Trainees are advised to demonstrate the types of collection methods for malaria cases as per the criteria suggested below. | 2 <b>Questionnaires and surveys</b> - Take up a detailed survey of malaria patients admitted at hospital. |
| 2 Get it checked with the trainer.   | 3 <b>Observations</b> - Observe the symptoms of malaria patients at hospital.                             |

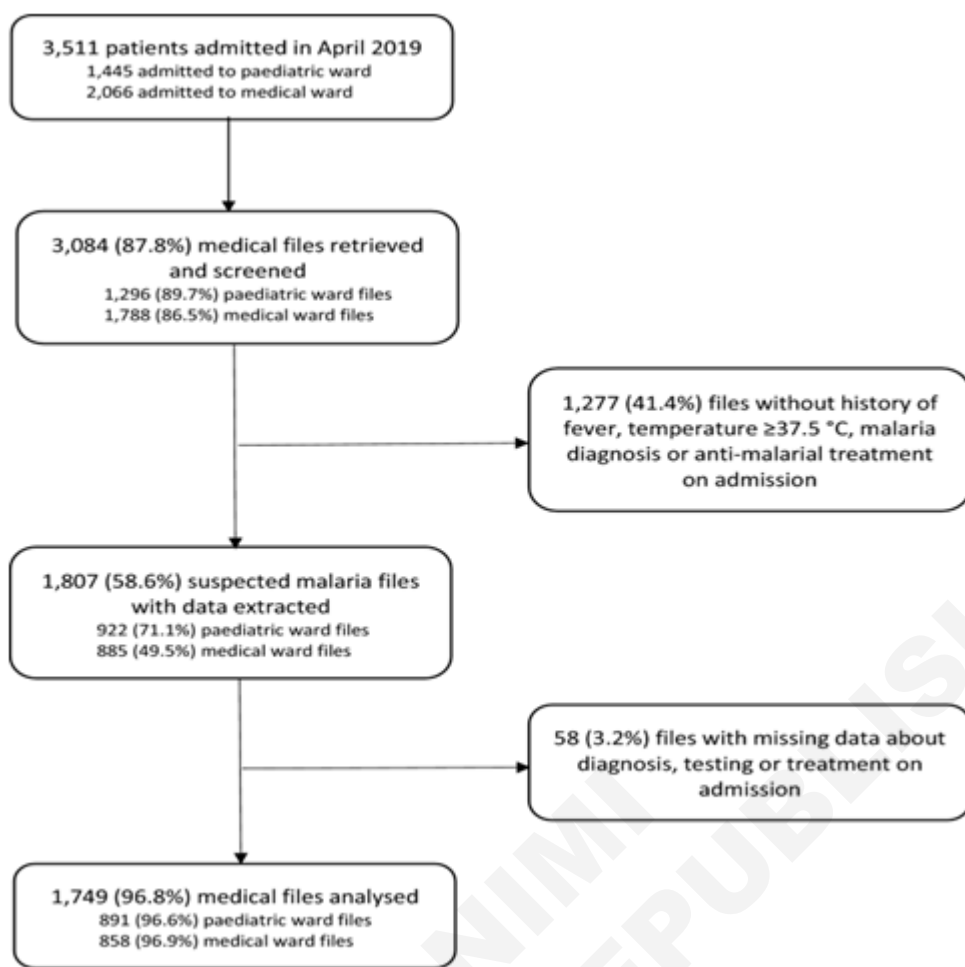
#### Criteria

- |  |  |
|--|--|
| 1 <b>Interviews</b> - Take up a face to face interview with the malaria patients admitted at hospital. | 4 <b>Documents and records</b> - Check the laboratory records of malaria patients. |
|  | 5 <b>Oral histories</b> - Recording the local history of malaria cases.            |

### TASK 2: Collect data from hospitals and prepare a detailed report as per the guidelines provided in the chart

- |  |                                    |
|--|------------------------------------|
| 1 Trainees are advised to collect data from hospitals and prepare a detailed report as per the guidelines provided in the chart below Fig 1. | 2 Get it checked with the trainer. |
|--|------------------------------------|

## Guidelines for Data collection from hospitals





**Data collection from hospitals from dengue cases**

**Objectives:** At the end of this exercise you shall be able to

- demonstrate the types of collection methods for dengue cases
- collect data from hospitals and prepare a detailed report as per the guidelines provided in the chart.

Requirements	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainees regarding the data collection from hospitals from dengue cases using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Demonstrate the types of collection methods for dengue cases**

- |  |  |
|--|--|
| <p>1 Trainees are advised to demonstrate the types of collection methods for dengue cases as per the criteria suggested below.</p> <p>2 Get it checked with the trainer.</p> | <p><b>2 Questionnaires and surveys</b> - Take up a detailed survey of dengue patients admitted at hospital.</p> <p><b>3 Observations</b> - Observe the symptoms of dengue patients at hospital.</p> <p><b>4 Documents and records</b> - Check the laboratory records of dengue patients.</p> <p><b>5 Oral histories</b> - Recording the local history of dengue cases.</p> |
|--|--|

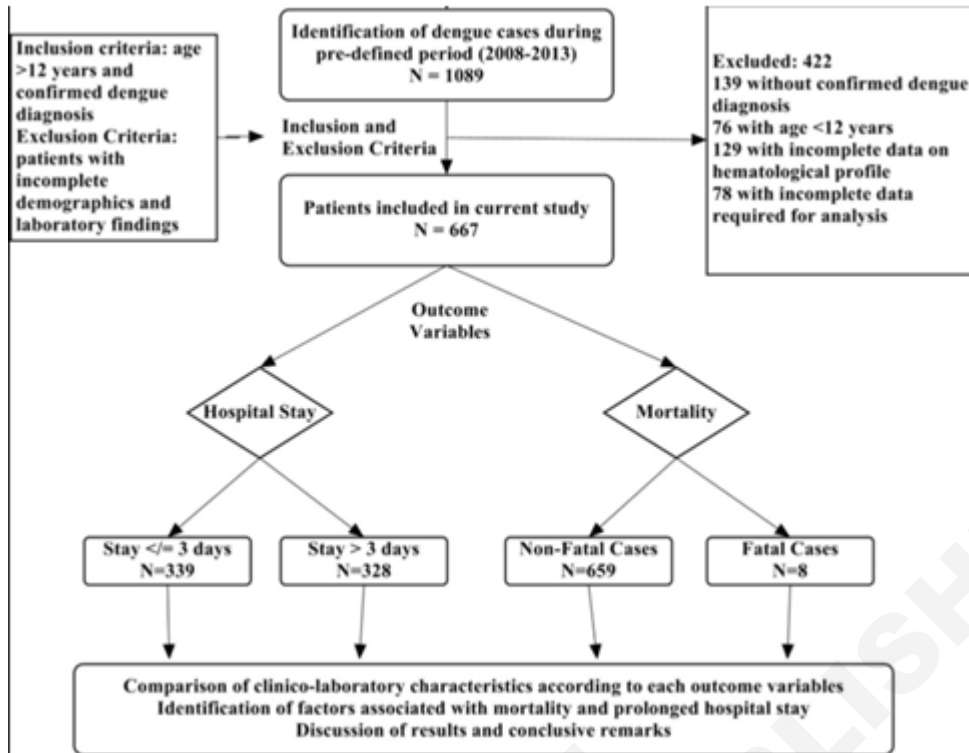
**Criteria**

- 1 Interviews** - Take up a face to face interview with the dengue patients admitted at hospital.

**TASK 2: Collect data from hospitals and prepare a detailed report as per the guidelines provided in the chart**

- |  |   |
|--|---|
| <p>1 Trainees are advised to collect data related to malaria cases from hospitals and prepare a detailed report as per the guidelines provided in the chart below Fig 1.</p> | <p>2 Get it checked with the trainer.</p> |
|--|---|

## Guidelines for Data collection from hospitals



**Health survey of people of a locality**

**Objectives:** At the end of this exercise you shall be able to

- **prepare a detailed report based on the specific health survey related questions.**

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note: Trainer will teach the trainees regarding the people health survey related questions using PPT and suitable demonstrations.**

**PROCEDURE**

**TASK 1: Preparation of detailed report based on the specific health survey questionnaire**

- 1 Trainees are advised to take up the ten health survey related questionnaire found below, analyze the results and prepare a detailed report and demonstrate the same.
- 2 Get it checked with the trainer.
- 4 How often do you get a health checkup?
- Once in 3 months
  - Once in 6 months
  - Once a year
  - Only when needed
  - Never get it done
  - Other

**Specific Health survey related questionnaire**

- 1 On a scale of 1 to 10, how healthy do you consider yourself?  
Ans:
- 2 Do you currently suffer from any chronic diseases?
- Yes
  - No
- 2 Do you have any hereditary conditions/diseases?
- High blood pressure
  - Diabetes
  - Hemophilia
  - Thalassemia
  - Huntington
  - Other (Please specify)
- 3 Are you habituated to drugs and alcohol?
- Yes to both
  - Only to drugs
  - Only to alcohol
  - I am not habituated to either
- 5 Overall, how do you rate the local hospitals in your area?
- Excellent
  - Above average
  - Average
  - Below average
  - Very poor
- 6 How would you evaluate your overall health? Would you say you are:
- In good physical health (No illness or disabilities).
  - Mildly physically impaired. (Minor illness or disabilities)
  - Moderately physically impaired. (Requires substantial treatment)
  - Severely physically impaired. (Requires extensive treatment)
  - Totally physically impaired. (Confined to bed)

7 In your opinion, at what capacity can you perform everyday activities?

- Excellent capacity
- Good capacity
- Moderate capacity
- Severely impaired capacity
- Completely impaired capacity

8 In the past 24 hours, what different kinds of medications have you taken?

9 How many medications have been prescribed by your physician that you have taken in the last 24 hours?

- 1
- 2
- 3
- 4

- 5
- More than 5
- None

10 How many medications have been prescribed by your physician that you have taken in the last 24 hours?

- 1
- 2
- 3
- 4
- 5
- More than 5
- None

-----

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**Vaccination survey in a locality**

**Objectives:** At the end of this exercise you shall be able to

- prepare a detailed report based on the vaccination survey in a locality.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainees regarding the vaccination survey related questions using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Preparation of detailed report based on the specific health survey questionnaire**

- 1 Trainees are advised to take up the vaccination related questionnaire found below under Table 1, analyze the results and prepare a detailed report and demonstrate the same.
- 2 Get it checked with the trainer.

**Table 1 Vaccination survey in a locality**

<b>Age</b>	<b>Immunisation</b>	<b>Date suggested</b>	<b>Date Given</b>	<b>Remarks</b>
Birth	BCG			
	OPV			
	Hep B1			
6 Weeks	DTap1			
	OPV/OPV1+IPV1			
	Hib 1			
	Hep B2			
	Rotavirus 1			
	PCV 1			
10 weeks	DTwP2/DTaP2			
	OPV2/OPV2+IPV2			
	Hib 2			
	Rotavirus 2			
	PCV 2			
14 weeks	DTwP3/DTaP3			
	OPV3/OPV3+IPV3			
	Hib 3			
	Rotavirus 3			
	Hepatitis B3			

Age	Immunisation	Date suggested	Date Given	Remarks
	PCV 3			
9 month	Measles			
12 months	Hepatitis A1			
15 months	Varicella			
	PCV Booster			
16 to 18 months	DTwP4/DTaP4			
	OPV4/OPV4+IPV4			
	Hib Booster			
18 months	Hepatitis A2			
2 Years	Typhoid 1			
5 Years	DTwP5/DTaP5			
	OPV5			
	MMR2			
	Typhoid 2			
	Varicella 2			
10 to 12 Years	Tdap/Td			
	HPV			
Other vaccines				

**Design and prepare population control measures on health**

- Objectives:** At the end of this exercise you shall be able to
- demonstrate the measures of population control
  - demonstrate the benefits and problems of over population
  - draw a pie-chart on birth control measures in India.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainees regarding the vaccination survey related questions using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Demonstrate the measures of population control**

- 1 Trainees are advised to demonstrate the measures of population control based on the following parameters projected under the given Table 1 below.
- 2 Get it checked with the trainer.

**Table 1 Measures of population control**

SI.No	Parameters influencing population control	Control measures
1	Social Measures	
2	Economic Measures	
3	Other measures	

-----

**TASK 2: Demonstrate the benefits and problems of over population**

- 1 Trainees are advised to demonstrate the benefits and problems of over population under the given Table 2 below.
- 2 Get it checked with the trainer.

**Table 2 Benefits and problems of over population**

SI.No	Benefits of over population	Problems due to the same
1		
2		
3		
4		
5		

**TASK 3: Draw a pie-chart on birth control measures in India**

- 1 Trainees are advised to draw a pie-chart on birth control measures in India as per the given data under Table 3.
- 2 Get it checked with the trainer.

**Table 3 Data for Pie-chart**

SI.No	Parameters	Percentage
1	None	33%
2	Male sterilisation	5%
3	IUD	7%
4	Female sterilisation	10%
5	Condom	4%
6	Oral contraceptive	18%
7	Traditional methods	21%
8	Other methods	2%



**Collection and dispatch of food samples for analysis preparation of papers for legal proceedings**

**Objectives:** At the end of this exercise you shall be able to

- identify and categorize the selection of food samples for preparation of analysis as per the sampling plan
- demonstrate the procedure for collection of food sample towards analysis
- prepare a sample receipt record for legal documentation.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainees regarding the collection and dispatch of food samples for analysis preparation of papers for legal proceedings using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Identify and categorize the selection of food samples for preparation of analysis as per the sampling plan**

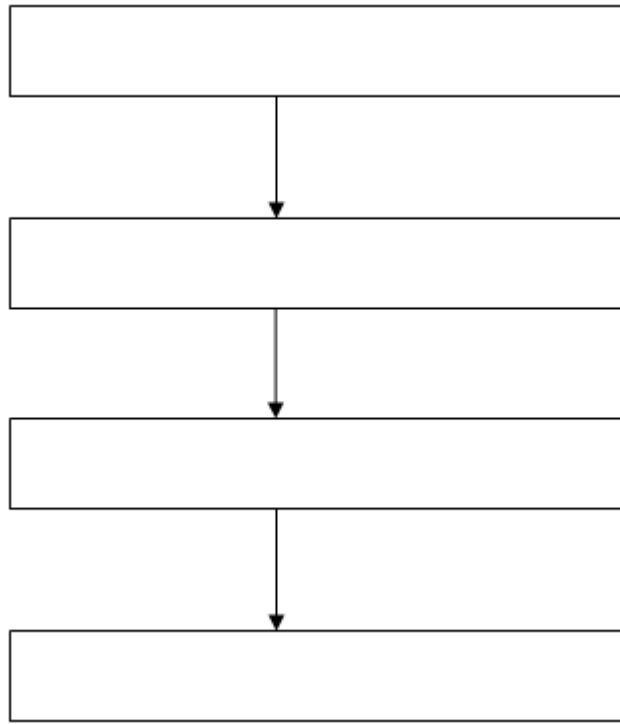
- 1 Trainees are advised to identify and categorize the selection of food samples for preparation of analysis as per the sampling plan suggested under Table 1.
- 2 Get it checked with the trainer.

**Table 1 Identification of food samples and category wise selection**

Sl.No	Sampling category	Sample collection methods	Maximum and Minimum Size collection	Category of Analysis
1	Food category I			
2	Food category II			
3	Food category III			

**TASK 2: Demonstrate the procedure for collection of food sample towards analysis**

- 1 Trainees are advised to write down the procedure for collection of food sample by Food Safety Officer towards analysis under the flowchart given below.
- 2 Get it checked with the trainer.



**TASK 3: Preparation of sample receipt record for legal documentation**

- 1 Trainees are advised to prepare a sample receipt record for legal documentation as per the food custodial storage register given under Table 2.
- 2 Get it checked with the trainer.

**Table 2 Documentation: Sample Receipt Record**

Sl.No	Date of receiving parcel	DO/FSO Code No	No of outer seals on parcel	Seal intact Yes/No If No details	Custodial storage Ambient/Freezer/Refrigerator	Name and Signature of the FSO
1						
2						
3						
4						
5						

**Performance of simple household tests to identify adulteration in milk, ghee, oil, sugar, tea, etc...**

**Objectives:** At the end of this exercise you shall be able to  
 • demonstrate the tests to identify adulteration.

Requirements			
<b>Tools/Instruments</b>			
• Computer with internet	- as reqd.	• LCD projector	- 1 No.
• Pencil & pen	- as reqd.	• Honey, sugar, tea, ghee, oil, milk	- as reqd.
• A4 sheet	- as reqd.		

**Note:** Trainer will teach the trainees regarding the various simple household tests to identify adulteration in milk, ghee, oil, sugar, tea using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Demonstrate the tests to identify adulteration**

- 1 Trainees are advised to demonstrate the tests to identify adulteration as per the given procedures.
- 2 Get it checked with the trainer.

**Testing methods**

- 1 Take a transparent glass of water.
- 2 Dissolve 10 gram of sugar in water.
- 3 If sugar is mixed with chalk, the adulterant will settle down at the bottom.

**Detection of chalk powder in sugar. (Fig 1)**



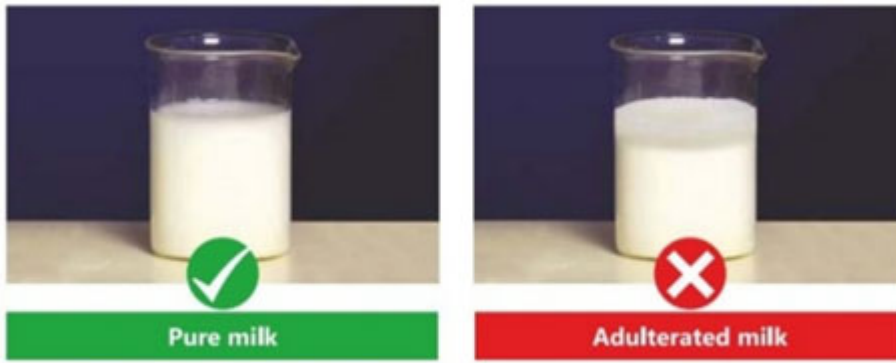
**Detection of detergent in milk. (Fig 2)**

**Testing method**

- 1 Take 5 to 10 ml of sample with an equal amount of water.
- 2 Shake the contents thoroughly.

- 3 If milk is adulterated with detergent, it forms dense lather.
- 4 Pure milk will form very thin foam layer due to agitation.

Fig 2



**Detection of other oils in coconut oil. (Fig 3)**

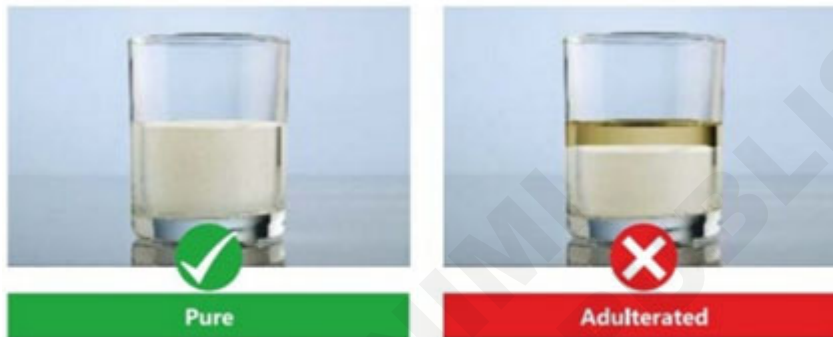
**Testing method**

- 1 Take coconut oil in a transparent glass.
- 2 Place this glass in refrigerator for 30 minutes. (Do not keep in the freezer)

3 After refrigeration, coconut oil solidifies.

4 If coconut oil is adulterated then other oils remain as per separate layer.

Fig 3



**Detection of sugar solution in honey. (Fig 4)**

**Testing method 1**

- 1 Take a transparent glass of water.
- 2 Add a drop of honey to the glass.
- 3 Pure honey will not disperse in water.
- 4 If the drop of honey disperses in water it indicates the presence of added sugar.

**Testing method 2**

- 1 Take a cotton wick dipped in a pure honey and light with a match stick.
- 2 Pure honey will burn.
- 3 If adulterated, the presence of water will not allow the honey to burn if it does; it will produce a cracking sound.

Fig 4



**Detection of papaya seeds in black pepper. (Fig 5)**

**Testing method 1**

- 1 Add some amount of black pepper to a glass of water.

2 Pure black pepper settles at the bottom.

3 In the adulterated black pepper, papaya seeds float on the surface of water.

Fig 5



Black pepper



Papaya seeds

**Detection of mashed potatoes, sweet potatoes and any other starches. (Fig 6)**

**Testing method**

- 1 Take ½ teaspoon of ghee/butter in a transparent glass bowl.

- 2 Add 2-3 drops of tincture of iodine.
- 3 Formation of blue colour indicates the presence of mashed potatoes, sweet potatoes and other starches.

Fig 6



Pure



Adulterated

**Detection of saw dust in chilli powder. (Fig 7)**

**Testing method**

- 1 Add the sample water.

- 2 The saw dust will float at the surface of water while chilli powder will settle down in bottom.

Fig 7



Chilli powder



Saw dust

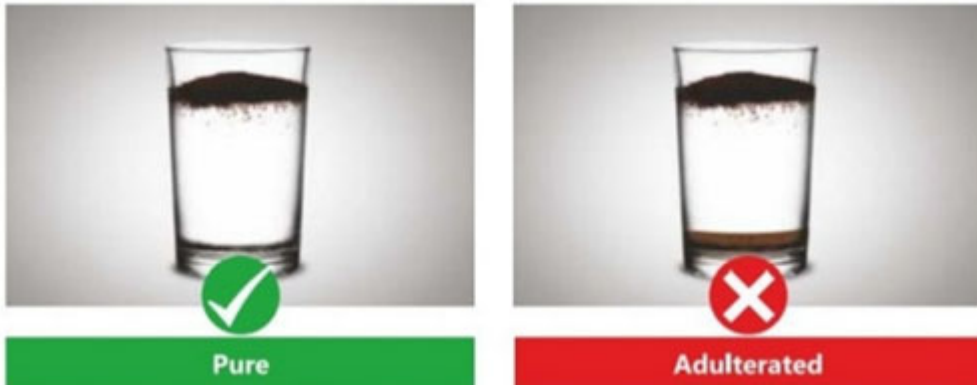
**Detection of clay in coffee powder. (Fig 8)**

**Testing method**

- 1 Add ½ teaspoon of coffee powder in a transparent glass of water.
- 2 Stir for a minute and keep it aside for 5 minutes. Observe the glass at the bottom.

- 3 Pure coffee powder will not leave any clay particles at the bottom.
- 4 If coffee powder is adulterated, clay particles will settle at the bottom.

Fig 8



**Detection of adulteration in peas. (Fig 9)**

**Testing methods**

- 1 Take a transparent glass of water.
- 2 Dissolve 10 gram of peas in water.

- 3 If water colour changes to green, then the sample is found to be adulterant.

Fig 9



**Detection of adulteration in green vegetables. (Fig 10)**

**Testing method 1**

- 1 Take a cotton piece soaked in water or vegetable oil (conduct the test separately).

- 2 Rub the outer green surface of a small part of green vegetable/chill.
- 3 If the cotton turns green, then it is adulterated with malachite green.

Fig 10



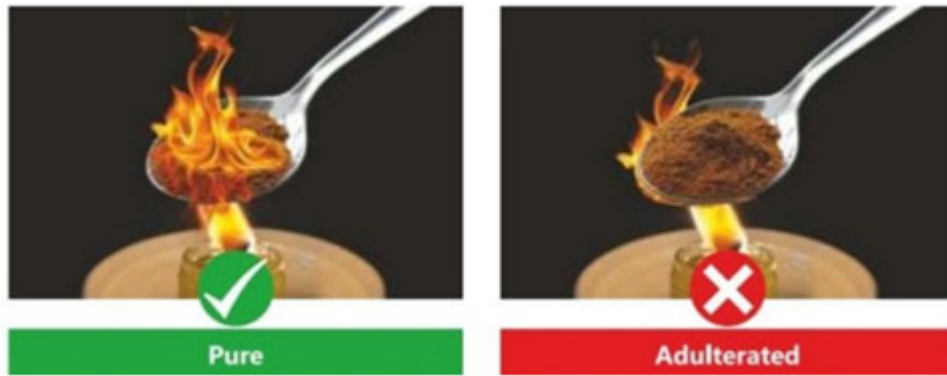
**Detection of foreign resin in asafetida. (Fig 11)**

**Testing method 1**

- 1 Burn small quantity of asafetida in a stainless steel spoon.

- 2 Pure asafetida will burn like camphor.
- 3 Adulterated asafetida will not produce bright flame like camphor.

Fig 11



**Detection of white powder in iodised salt. (Fig 12)**

**Testing method**

- 1 Stir is teaspoon of sample of salt in a glass of water.
- 2 Pure salt dissolves completely and gives a clear solution or gives slightly turbid solution due to the presence of permitted ant caking agent in the salt.

- 3 If salt is adulterated solution turns dense white turbid in the presence of chalk powder and other insoluble impurities will settle down at the bottom.

Fig 12



**Detection of exhausted tea in tea leaves. (Fig 13)**

**Testing method**

- 1 Take a filter paper and spread few tea leaves.
- 2 Sprinkle with water to wet the filter paper.

- 3 Wash the filter paper under tap water and observe the stains against light.
- 4 Pure tea leaves will not stain the filter paper.
- 5 If coal tar is present, it will immediately stain the filter paper.

Fig 13



**Acquaintance with registration of acts**

**Objectives:** At the end of this exercise you shall be able to

- list the different types of acquaintance forms
- prepare a document for acquaintance to any users
- sketch the structure of CPlanT acquaintance model.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainees regarding the procedures related to acquaintance with registration of acts using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: List the different types of acquaintance forms**

- 1 Trainees are advised to list down the different types of forms available for acquaintance. 5
- 2 Get it checked with the trainer. 6

**List the different forms for acquaintance**

- 1 8
- 2 9
- 3 10
- 4

**TASK 2: Prepare a document for acquaintance to any users**

- 1 Trainees are advised to prepare a document for acquaintance to any user as per the give template demonstrated below under Table 1.
- 2 Get it checked with the trainer.

**Table 1 Document for acquaintance**

Sl.No	Document Attributes	Status	Action
1	Contractor		
2	Due date		
3	Document Type		
4	Parent Folder		
5	Date created		
6	Author		

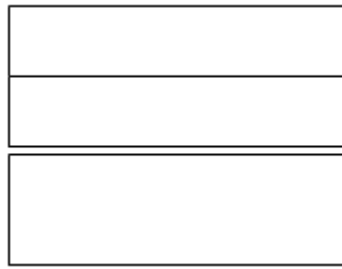


**TASK 3: Sketch the structure of CPlanT acquaintance model**

1 Trainees are advised to write down the structure of CPlanT acquaintance model under the flow diagram given below as Fig 1.

2 Get it checked with the trainer.

**Structure of CPLanT acquaintance model**



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**Prepare reporting of different acts**

**Objectives:** At the end of this exercise you shall be able to

- investigate the health issues of public at a given locality and prepare a detailed report
- investigate the cases of food poisoning at a given locality and prepare a detailed report
- inspect the birth and death rate at a given locality and prepare a detailed report.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note: Trainer will teach the trainees regarding the various public health acts using PPT and suitable demonstrations.**

**PROCEDURE**

**TASK 1: Investigate the health issues of public at a given locality and prepare a detailed report**

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1 Trainees are advised to investigate the health issues at a given locality and prepare a detailed report.</li> <li>2 Get it checked with the trainer.</li> </ol> | <ul style="list-style-type: none"> <li>• Combing the surrounding to find out any other case</li> <li>• Disinfection</li> <li>• Collection of sample of food and water, etc....</li> <li>• Arrangements to carry out inoculation</li> <li>• Educative propaganda</li> <li>• Steps for rectification of sanitary defects</li> </ul> |
|--|---|

**Report making check list**

- 1 Persons affected with Infectious disease at the given locality.
- 2 Control measures initiated such as:

**TASK 2: Investigate the cases of food poisoning at a given locality and prepare a detailed report**

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1 Trainees are advised to investigate the cases of food poisoning at a given locality and prepare a detailed report.</li> <li>2 Get it checked with the trainer.</li> </ol> | <ol style="list-style-type: none"> <li>2 Take photos of compliant and non-compliant items.</li> <li>3 Assign corrective actions to identified issues during inspection.</li> <li>4 Add comments and recommendations.</li> <li>5 Sign off with a digital signature from the inspector.</li> </ol> |
|--|--|

**Report making check list**

- 1 Inspect and evaluate staff's personal hygiene, food handling and storage processes, and proper waste disposal.

**TASK 3: Inspect the birth and death rate at a given locality and prepare a detailed report**

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1 Trainees are advised to inspect the birth and death rate at a given locality and prepare a detailed report.</li> <li>2 Get it checked with the trainer.</li> </ol> | <ul style="list-style-type: none"> <li>• Provision of pyres</li> <li>• Cleanliness and Structural maintenance</li> <li>• Stock of firewood</li> <li>• Attendance of staff</li> <li>• Maintenance of registers at crematory</li> <li>• Make enquiries about death, certificate of cause of death by MO.</li> </ul> |
|---|---|

**Report making check list**

- 1 Inspect the birth and death rate at the given locality
- 2 Inspect the places of dead with regard to.....
  - Water supply

**Documentation process for implementation of different acts**

**Objectives:** At the end of this exercise you shall be able to

- prepare a document on the reforms relating to elimination of the requirements of renewals of certificates/ approvals/licenses
- prepare a document related to the challenges faced in the implementation of the Public procurement act
- prepare a Annual Report regarding the implementation of the newly established Central and State Information Act for the year.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainees regarding the documentation procedures for implementation of different acts using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Reform Action Plan (RAP) and documentation process**

- 1 Trainees are advised to prepare documentation on the reforms relating to elimination of the requirements of renewals of certificates/approvals/licenses under the given Table 1.
- 2 Get it checked with the trainer.

**Table 1 Reform Action Plan (RAP)**

Reform No	Area	Sub-Area	Reform	Reform Category	Department involved	Action Type	Description of action to be taken by the concerned department	Timeline for implementation

## TASK 2: Documentation process involved in the implementation of Public Procurement Act

- 1 Trainees are advised to prepare the details related to the challenges faced in the implementation of the Public procurement act under the given Table 2.
- 2 Get it checked with the trainer.

**Table 2 Documentation process**

Sl.No	Legal Framework	Details
1	Public Procurement Act	
2	Public Procurement Manual	
3	Standard Tender Documents	
4	Public Procurement Regulations	

## TASK 3: Annual Report Preparation regarding the implementation of the newly established Central and State Information Act for the year

- 1 Trainees are advised to prepare an annual report regarding the implementation of the newly established Central and State Information Act for the year based on the monitoring effect and evaluation parameters suggested below.
- 2 Get it checked with the trainer.

### Monitoring Effect and Evaluation Parameters for Annual report preparation

- the number of requests made to each public authority;
- the number of decisions where applicants were not entitled to access to the documents pursuant to the requests, the provisions of this Act under which the decisions were made and the number of times such provisions were invoked;
- the number of appeals referred to the Information Commission for review, the nature of the appeals and the outcome of the appeals;
- particulars of any disciplinary action taken against any officer in respect of the administration of this Act; and
- the amount of charges collected by each public authority under this Act;
- any facts which indicate an effort by public authorities to implement the spirit and intention of the Act;
- recommendations for reform, including recommendations in respect of particular public authorities, for the development, improvement, modernization, reform or amendment to the Act, other legislation or the common law, or any other matter relevant for operationalizing the right to access information.

**Prepare a chart of pollution levels of toxins of different industries in an area**

**Objectives:** At the end of this exercise you shall be able to

- prepare a chart on the pollution causing chemical substances used in different industries and demonstrate the same
- prepare a chart on permissible limits of drinking water quality at different industries in an area and demonstrate the same
- illustrate a noise decibel vector scale diagram.

<b>Requirements</b>	
<b>Tools/Instruments</b>	
• Computer with internet	- as reqd.
• Pencil & pen	- as reqd.
• A4 sheet	- as reqd.
• LCD projector	- 1 No.

**Note:** Trainer will teach the trainees regarding the different pollution levels of toxins of different industries in an area using PPT and suitable demonstrations.

**PROCEDURE**

**TASK 1: Prepare a chart on the pollution causing chemical substances used in different industries in an area**

- 1 Trainees are advised to prepare a chart based on the pollution causing chemical substances listed below in the table 1 and demonstrate the same.
- 2 Get it checked with the trainer.

**Table 1 Chemical substances most frequently investigated**

<b>Environmental matrix</b>	<b>Substances</b>	<b>Frequency</b>	<b>Percentage</b>
Air, soil, water, sediments or a combination of them	Volatile organic compounds (examined in general or as only polycyclic aromatic hydrocarbons or monoaromatics)	40	52
	Heavy metals (including vanadium)	18	23
	Polychlorinated biphenyls (sometimes associated with other contaminants, such as dioxins and furans)	9	12
	PM2.5	1	1
	Various substances (and general toxicity)	7	9
Soil and cotton rat bones	Fluoride	2	3

**TASK 2: Prepare a chart on permissible limits of drinking water quality at different industries in an area**

- 1 Trainees are advised to prepare a chart based on permissible limits of drinking water quality at different industries in an area as per the data provided under Table 2.
- 2 Get it checked with the trainer.

**Table 2 Permissible limits of drinking water quality**

Sl.No	Characteristic	Permissible Limit
1	Colour	Colourless
2	Smell	Odourless
3	pH value	Neutral pH 7-8
4	Water hardness	<5° dH
5	Dissolved solids	< 1mg /l
6	Solid deposits	<50 mg/l

7	Organic substances	<20 mg/l
8	Inorganic salts	<500 mg/l
9	Iron (Fe)	<0.1 mg/l
10	Manganese (Mn)	<0.02 mg/l
11	Copper (Cu)	<0.005 mg/l
12	Nitrate (NO <sub>3</sub> )	<50 mg/l
13	Nitrite (NO <sub>2</sub> )	<5 mg/l

**TASK 3: Illustrate a noise decibel vector scale diagram**

- 1 Draw a decibel scale chart vector illustration measuring noise pollution as per the parameters given in the Table 3.
- 2 Get it checked with the trainer.

**Table 3 Scale chart vector**

Sl.No	Decibel level	Instrument
1	140 db	Fire worked
2	130 db	Jet engine
3	120 db	Siren
4	100 db	Helicopter
5	90 db	Hair dryer
6	80 db	Truck
7	70 db	Car
8	60 db	Conversation
9	50 db	Refrigerator
10	40 db	Rain
11	20 db	Whsiper
12	10 db	Breath