

<b>CP-9579</b>
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<b>Sub. Code</b>
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<b>30611</b>
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**M.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**First Semester**

**Health Safety Environment**

**SAFETY IN FACILITY DESIGN**

**(2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What are the types of drives?
2. List out the types of personal protection.
3. Define sacking.
4. What do you mean by rated capacities?
5. What is the purpose of lighting?
6. Define glaring and its types.
7. What do you mean by glare?
8. Define housekeeping.
9. Define sling and mention its types.
10. What do you mean by hazard?

**Part B****(5 × 5 = 25)**Answer **all** questions.

11. (a) Explain the dollies and wheel barrows.  
Or  
(b) Explain the deterioration causes.
12. (a) Explain the maintenance safety rules.  
Or  
(b) List out the problems in hazardous material.
13. (a) Explain the safe effluent disposal.  
Or  
(b) What are the advantages of good illumination?
14. (a) Explain the inspection checklist for crane.  
Or  
(b) Explain the limit devices.
15. (a) Explain the hooks and its attachment.  
Or  
(b) Explain the emergency procedures.

**Part C****(3 × 10 = 30)**Answer **all** questions.

16. (a) Explain the following :  
(i) Pesticides  
(ii) Fertilizers  
(iii) Pharmaceuticals  
(iv) Refineries.  
Or  
(b) Explain the principles of 5S.

17. (a) Explain the inspection of crane and hoist.

Or

(b) Explain the storage and handling of cryogenic liquids.

18. (a) Explain the operating principles of mechanical material handling.

Or

(b) Explain the maintenance in electric trucks and gasoline operated trucks.

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<b>CP-9580</b>
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<b>Sub. Code</b>
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<b>30612</b>
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**M.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**First Semester**

**Health Safety Environment**

**HUMAN FACTORS IN ENGINEERING**

**(2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define job enrichment theory.
2. Define visual display units.
3. Define motivation.
4. What do you mean by work surface design?
5. Define personality.
6. What do you mean by modern ergonomics?
7. Define WMSDS.
8. Define attitude.
9. What do you mean by cognitive system?
10. What are the applications of ergonomics?

**Part B****(5 × 5 = 25)**Answer **all** questions.

11. (a) Explain the guidelines for design of static work.

Or

- (b) Explain the prevention of manual handling injuries in the work place.

12. (a) Explain the method of measuring characteristics.

Or

- (b) Explain the determination of attitudes.

13. (a) Explain the changing attitudes learning.

Or

- (b) Explain the motivational requirements.

14. (a) Explain the ergonomics approach to work station design.

Or

- (b) Explain the design of manual handling tasks.

15. (a) Explain the postural stability.

Or

- (b) Explain the auditory displays.

**Part C****(3 × 10 = 30)**Answer **all** questions.

16. (a) Explain the ergonomics.

Or

- (b) Explain the anatomy.

17. (a) Explain the human behavior.

Or

(b) Explain the anthropometry.

18. (a) Explain the work design for standing and seated works.

Or

(b) Explain the human skills and performance.

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<b>CP-9581</b>
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<b>Sub. Code</b>
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<b>30613</b>
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**M.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**First Semester**

**Health Safety Environment**

**BASICS OF SAFETY ENGINEERING**

**(2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define safety policy.
2. Define disaster.
3. Define JSA.
4. What is meant by Incident Recall Technique?
5. What is meant by UA & UC? Give 2 examples on each.
6. Define permanent partial disability.
7. Define permanent total disability.
8. What is meant by near miss? Give 2 examples.
9. Why safety training is required? Name any 2 types of safety training.
10. In India, when do we celebrate National Safety Day & National Fire Safety Day?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) What are the duties of supervisors with respect to safety?

Or

- (b) What are the duties of safety officer?

12. (a) Briefly explain about safety audit and its types.

Or

- (b) Explain about incident recall technique.

13. (a) Explain about domino's sequence.

Or

- (b) Discuss in short about cost of an accident.

14. (a) How to measure the performance of safety of any company? Also explain about frequency rate & severity rate.

Or

- (b) Explain about safe — T — score.

15. (a) Briefly explain about induction training & its importance.

Or

- (b) Briefly explain about methods to promote safety in workplace.



**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss in detail about safety budgeting. What points are to be considered while preparing safety budget?

Or

- (b) Write the names of any 10 safety related documents that needs to be followed. Also explain why?
17. (a) Explain about accidents and its types. Also explain when and why it needs to be reported to statutory body?

Or

- (b) Prepare a JSA for excavation activity.
18. (a) How to create safety awareness among workers and managers?

Or

- (b) What are the obstacles that will be faced while implementing safety? Explain why.
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<b>CP-9582</b>
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<b>Sub. Code</b>
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<b>30614</b>
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**M.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**First Semester**

**Health Safety Environment**

**FIRE SAFETY – DESIGN, INSTALLATION AND  
MAINTENANCE**

**(2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is auto ignition temperature?
2. Define BLEVE.
3. Define fire load.
4. What are the types of fire extinguishers?
5. Name the chemicals inside DCP and AFFF.
6. What are the types of detectors?
7. What are the pumps that are used in fire hydrant system?
8. What is fire alarm panel?
9. What is the purpose of static water tank?
10. Define fire zone.

**Part B****(5 × 5 = 25)**Answer **all** questions.

11. (a) Explain about fire safety measures in chemical warehouse.

Or

- (b) Explain about fire safety measures in server room.

12. (a) Explain about fire extinguisher inspection and maintenance.

Or

- (b) Explain about classification of fire.

13. (a) Explain about emergency response team and their responsibilities.

Or

- (b) Discuss in short Fire sprinkler system.

14. (a) Explain about detector selection, placement and maintenance.

Or

- (b) Explain about fire hydrant installation and maintenance.

15. (a) Briefly explain about fire escape routes, emergency assembly points and mock drill.

Or

- (b) Briefly explain about classification of buildings based on occupancy.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) How to conduct a fire mock drill in a manufacturing industry? Explain about the challenges in conducting.

Or

- (b) Explain in detail about fire safety measures of a educational institution.
17. (a) Explain about selection and placement of fire extinguishers.

Or

- (b) How to calculate fire load for a wood processing industry.
18. (a) Explain about fire alarm panel and its applications.

Or

- (b) Prepare a fire emergency response plan of a high rise building.
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<b>CP-9583</b>
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<b>Sub. Code</b>
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<b>30615a</b>
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**M.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**First Semester**

**Health Safety Environment**

**OCCUPATIONAL HEALTH AND SAFETY  
MANAGEMENT**

**(2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define noise.
2. What are the properties of sound?
3. Define risk factor.
4. What are the effects of noise?
5. Define ionizing radiation.
6. What are the hazards in chemical?
7. List out the biological and organomical hazards.
8. Define fumes.
9. Define CTS.
10. What do you mean by personal hygiene?

**Part B****(5 × 5 = 25)**Answer **all** questions.

11. (a) List out the general control method.

Or

- (b) Explain the industrial hygiene calculations.

12. (a) Explain the disorders of the neck-back injuries.

Or

- (b) Explain the CPR.

13. (a) Explain the aerobic and anaerobic work.

Or

- (b) Explain the medical examination related to occupational health and toxicology.

14. (a) Explain the hazard control program.

Or

- (b) Explain the handling biological safety.

15. (a) Explain the concept and spectrum of health.

Or

- (b) What are the temporary and cumulative effects?

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the following :
- (i) Silicosis
  - (ii) Asbertosis
  - (iii) Pneumoconiosis
  - (iv) Aluminosis

Or

- (b) Explain the following :
- (i) Anthracosis
  - (ii) Siderosis
  - (iii) Pneumoconiosis
  - (iv) Anthrax

17. (a) Explain the engineering control with example.

Or

- (b) Explain the ionizing radiation with effects and control measures.

18. (a) Explain the MSD and CTS.

Or

- (b) Explain the categorization of job heaviness.

<b>CP-9584</b>
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<b>Sub. Code</b>
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<b>30615b</b>
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**M.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**First Semester**

**Health Safety Environment**

**SAFETY IN MINING INDUSTRY**

**(2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define accident.
2. What is meant by fire prevention?
3. What is meant by flooding?
4. What is meant by warning sensors?
5. What is meant by atmospheric pollution?
6. What is meant by ventilation?
7. What is risk? Give any one example.
8. What is hazard? Give any one example.
9. What is minor accident?
10. What is reportable accident?



**Part B****(5 × 5 = 25)**Answer **all** questions.

11. (a) How to prevent accident from heavy machineries?

Or

- (b) How to handle explosives safely in mining?

12. (a) Briefly discuss about sensors & detectors.

Or

- (b) Briefly discuss about occupational hazards related to mining.

13. (a) Briefly discuss about noise and its effects.

Or

- (b) Briefly discuss about vibration and its effects.

14. (a) Briefly discuss about steps of risk assessment.

Or

- (b) Briefly discuss about fault tree analysis.

15. (a) Briefly discuss about emergency preparedness.

Or

- (b) Briefly discuss about disaster management.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about safety while handling hand tools and power tools.

Or

- (b) Explain in detail about the hazards in mining industries also explain about their control measures.

17. (a) Explain in detail about personal protective equipments.

Or

- (b) Explain in detail about failure mode & effect analysis.

18. (a) Explain in detail about accident investigation & reporting.

Or

- (b) Explain in detail about measures for improving safety in mines.
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**CP-9585**

**Sub. Code**

**30615c**

**M.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**First Semester**

**Health Safety Environment**

**SAFETY IN FIREWORKS INDUSTRY**

**(2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define fire.
2. Define static electricity.
3. Define fire prevention.
4. What are the types of fire extinguishers?
5. What are the hazards in fireworks industry?
6. Define friction.
7. What is lighting arrestor?
8. What is biological barrier?
9. What is earthing?
10. What are the reasons for fire?

**Part B****(5 × 5 = 25)**Answer **all** questions.

11. (a) Explain briefly about metallic fire.

Or

(b) Explain briefly about chemical fire.

12. (a) Explain briefly about earthing and its implementation.

Or

(b) Explain briefly about PPE.

13. (a) Explain briefly about safety in hand tools.

Or

(b) Explain briefly about storage requirements of explosives.

14. (a) Explain briefly about transport safety.

Or

(b) Explain briefly about safety in chemical handling.

15. (a) Explain briefly about wastes in fireworks industries.

Or

(b) Explain briefly about first aid for burns.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Describe in detail about fire prevention and control.

Or

- (b) Describe in detail about hazards in firework industries.

17. (a) Describe in detail about pollution prevention in fireworks industries.

Or

- (b) Describe in detail about handling and storage of explosives.

18. (a) Describe in detail about electrical safety requirements of fireworks industries.

Or

- (b) Write a risk assessment of fireworks industries.

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**CP-9593**

**Sub. Code**

**30631**

**M.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Third Semester**

**Health Safety Environment**

**SAFETY IN CONSTRUCTION SECTOR**

**(2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define erection.
2. What do you mean by dismantling?
3. What is fragile roof?
4. What do you mean by trench?
5. List out some portable electrical tools.
6. Name some excavators.
7. What is the safe way of manual handling?
8. What is trusses?
9. Write the uses of conveyors and its hazards.
10. What do you mean by PFAS?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write the importance of education and training.  
Or  
(b) Explain the pre construction meeting.
12. (a) Explain post blast inspection.  
Or  
(b) Explain pre blast inspection.
13. (a) What is the requirement for safe work platform?  
Or  
(b) Explain the safe use of ladders.
14. (a) List out the types of cranes.  
Or  
(b) Explain chain pulley block.
15. (a) Explain the safe clearance zone.  
Or  
(b) What are the safety should be followed in earth moving equipments?

**Part C**

(3 × 10 = 30)

Answer **three** questions.

16. (a) Explain in detail about the selection, inspection and testing of cranes.  
Or  
(b) Explain the importance of checklist and prepare a checklist for a scaffolding work.

17. (a) Explain in detail about tunneling and its hazards with recommend control measures.

Or

- (b) Explain in detail about pre blasting and post blasting inspection.

18. (a) Explain excavation work in detail.

Or

- (b) Explain demolition work in detail.

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**CP-9594**

**Sub. Code**

**30632**

**M.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Third Semester**

**Health Safety Environment**

**INDUSTRIAL SAFETY ENGINEERING**

**(2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is fire hydrant?
2. Define zero mechanical state (ZMS).
3. List out some trip devices.
4. What do you mean by fixed guards?
5. Define brazing.
6. What do you mean by welding?
7. Define flashback arrestor.
8. List out advantages of plant layout.
9. What is electro plating?
10. What do you mean by blasting?

**Part B****(5 × 5 = 25)**Answer **all** questions.

11. (a) Explain dynamic balancing.

Or

(b) List out the acute effects of radiation.

12. (a) What are the safety measures to be followed in radiation work?

Or

(b) List out the hazards in paint shop and recommend the appropriate PPE.

13. (a) Explain the hydro test.

Or

(b) List out the types of guards used in machines.

14. (a) Explain the forging operation.

Or

(b) List out the non-mechanical hazards.

15. (a) Make a checklist for machinery maintenance.

Or

(b) What are the health hazards associated with welding fumes?

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Briefly explain the structure of OHSAS 18001.

Or

- (b) Explain the safety storage of LPH.

17. (a) Explain personal protective equipment in detail with appropriate examples and work activity.

Or

- (b) Briefly explain the safe location for chemical storage.

18. (a) Explain the stage location CNG.

Or

- (b) Explain in detail about machine guarding.
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**CP-9595**

**Sub. Code**

**30633**

**M.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Third Semester**

**Health Safety Environment**

**DISASTER MANAGEMENT AND RESPONSE**

**(2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define disaster.
2. What is known as deforestation?
3. What is known as APELL?
4. What are the types of emergency planning?
5. What is known as Bio-Diversity.
6. What is known as global warming?
7. What is known as ON-SHORE?
8. Define nuclear waste.
9. What is Environmental education?
10. List out the demerits of population growth.

**Part B****(5 × 5 = 25)**Answer **all** questions.

11. (a) Explain the effects of wind and water related disaster.

Or

- (b) Explain demerits of deforestation.

12. (a) Explain briefly about the case studies of technology disaster with statistical detail.

Or

- (b) Explain the ON-SITE emergency planning.

13. (a) Explain briefly about the ozone depletion.

Or

- (b) Discuss about the eco friendly products.

14. (a) Explain in detail about OFF-SHORE drilling process.

Or

- (b) Discuss marine pollution and give control measures

15. (a) Explain the pollution with its types.

Or

- (b) Briefly explain about national polices about disaster.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about the disaster mitigation.

Or

- (b) Discuss the space technology for control of geological disaster.

17. (a) Write a short note on :

- (i) Software on emergency control
- (ii) Monitoring device for detection of gases in the atmosphere.

Or

- (b) Explain in detail about Extreme event analysis.

18. (a) Explain in detail about Risk Assessment.

Or

- (b) Write a short note on :

- (i) Forecasting and Warning
- (ii) Hazardous and Nuclear waste.

**CP-9596**

**Sub. Code**

**30634**

**M.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Third Semester**

**Health Safety Environment**

**HAZARD ANALYSIS**

**(2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define Hazard.
2. What is known as individual Risk?
3. Define RC.
4. What is known as card Gap test?
5. What is known as event tree analysis?
6. Define HAZAN.
7. Define BLEVE.
8. What is known as LAYOUT?
9. Define PASADENA.
10. Define nuclear power plant.

**Part B****(5 × 5 = 25)**Answer **all** questions.

11. (a) Write shorts on :  
(i) Social Benefits Vs Technological Risks  
(ii) Risk Estimation.

Or

- (b) Explain the safety warning system.

12. (a) Explain briefly about ARC.

Or

- (b) Explain briefly about RSST.

13. (a) Explain briefly about Fault tree Analysis.

Or

- (b) Explain the FETI.

14. (a) Explain the Two Phase Release technique.

Or

- (b) Explain the Risk and Effect of confined explosion.

15. (a) Discuss the SEVESO Disaster.

Or

- (b) Explain the PORT HUMAN DISASTER.

**Part C****(3 × 10 = 30)**Answer **all** questions.

16. (a) Explain briefly about the AUDUIT with its types.

Or

- (b) Explain briefly about HIRA.



17. (a) Explain in detail about Explosive testing and Deflagration test.

Or

(b) Explain in detail about HAZAN.

18. (a) Explain in detail about BLEVE and UVCE.

Or

(b) Discuss the BHOPAL disaster with its effect and control measure.

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**CP-9597**

**Sub. Code**

**30635a**

**M.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Third Semester**

**Health Safety Environment**

**SAFETY IN POWDER HANDLING**

**(2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is known as metal powder?
2. Define powder classification.
3. Define PYROTECHNICS.
4. What is known as explosives?
5. What is Dust?
6. What is Green ward furnace?
7. Define Electroplating.
8. What is SILOS?
9. What is PPE?
10. What is labeling?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss the Merits and Demerits of Non Metallic Powder.

Or

- (b) Explain the charge distribution of powder?

12. (a) Explain briefly about Milling Process.

Or

- (b) Explain the PYROTECHNICS.

13. (a) Explain the Explosibility Tests.

Or

- (b) Explain briefly about Dust Explosion Prevention.

14. (a) Write shorts on :

(i) SILOS

(ii) GREEN ELERVATORS.

Or

- (b) Explain the Electrostatic charges.

15. (a) Explain the control approaches of silica in coal mine.

Or

- (b) Discuss the merits and demerits of silica in coal mine.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain briefly about the physical, chemical and other properties of powder.

Or

- (b) Write shorts on :
- (i) Electro Deposition
  - (ii) Spray Drying.

17. (a) Explain briefly about Minimum Explosive Concentration and minimum Ignition energy.

Or

- (b) Discuss briefly about Dust explosion protection and dust explosion venting.

18. (a) Explain briefly about creation of static Electricity and method of discharge the static elements.

Or

- (b) Write shorts on :
- (i) PPE for dust
  - (ii) Electro plating Process.

**CP-9598**

**Sub. Code**

**30635b**

**M.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Third Semester**

**Health Safety Environment**

**DOCK SAFETY**

**(2017 onwards)**

Time : 3 Hours

Maximum :75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. What is known as dock?
2. List out some hazardous chemical.
3. Define engine.
4. List out the types of HATCH.
5. Define slings.
6. Define transtainers.
7. List out the types of cargo.
8. Define stacking.
9. Define fire.
10. What is known as on site?

**Part B**

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain about safety measures in import of hazardous chemicals.

Or

- (b) Explain about environment protection act 1989.

12. (a) Explain about :

- (i) safety in use of transport equipment
- (ii) internal combustion engine.

Or

- (b) Explain about safety in use of transport equipment.

13. (a) Explain about safety measure of top lift trucks.

Or

- (b) Discuss in short about use and care of natural fiber ropes.

14. (a) Explain about stacking and unstacking.

Or

- (b) Explain about testing and inspection of containers.

15. (a) Briefly explain about collapse of lifting appliances.

Or

- (b) Briefly explain about illumination of decks and in holds.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about function of safety committees and advisory committee

Or

- (b) Explain in detail about types of cargo ships.

17. (a) Explain about construction, maintenance and use of various methods of rigging of derricks.

Or

- (b) Explain in detail about slings and loose gears with its types.

18. (a) Explain about restriction of loading and unloading operations in ship.

Or

- (b) Discuss about the preparation of onsite emergency plan.

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<b>Sub. Code</b>
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<b>30635c</b>
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**M.Sc. DEGREE EXAMINATION, NOVEMBER 2018**

**Third Semester**

**Health Safety Environment**

**HAZARDOUS WASTE MANAGEMENT**

**(2017 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define hazardous waste.
2. What is municipal solid waste?
3. What are the disposal options for hazardous waste?
4. Define MSIHC rule.
5. What are the treatment process for solid waste?
6. What are the things to be considered while transporting the solid waste?
7. Define environmental risk assessment.
8. Define risk.
9. What is air stripping?
10. What is solidification of hazardous waste?



**Part B****(5 × 5 = 25)**Answer **all** questions.

11. (a) Describe about the hazardous waste characteristics.

Or

- (b) Describe about the treatment, storage and disposal of hazardous waste.

12. (a) Describe about the compatibility and flammability of chemicals.

Or

- (b) Discuss about the recycle plastics usage rules.

13. (a) Write about the disposal options of solid waste.

Or

- (b) Discuss about the sources of radioactive waste.

14. (a) Discuss about the methods of risk assessment.

Or

- (b) Write about the incineration.

15. (a) Write a note on chemical oxidation process for hazardous waste.

Or

- (b) Write a note on slurry phase bio reactor.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Describe in detail about the surface storage and land disposal of hazardous waste.

Or

- (b) Describe in detail about the batteries rules.

17. (a) Discuss about the waste generation from the nuclear power plant and disposal options

Or

- (b) Write a note on land fill design for solid waste.

18. (a) Describe in detail about the physicochemical processes for hazardous waste.

Or

- (b) Write a note on municipal solid waste rules.
-