

C-5798

Sub. Code

91023

B.Sc. DEGREE EXAMINATION, APRIL 2022

Second Semester

Fire and Industrial Safety

SAFETY IN MATERIAL HANDLING

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** the questions.

1. What material handling is essential?
2. State the types of material handling.
3. Mention the purpose of cranes.
4. Name the signalling devices used.
5. What is the use of derrick?
6. How the life of a conveyor is improved?
7. Write about a rigger.
8. What do you mean by Center of gravity?
9. Write down the types of trucks.
10. Differentiate Escalator and Elevator.

Part B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Write about common injuries during material handling and their remedies.

Or

- (b) What is Cryogenic liquid and how you safely handle and store it?

12. (a) List out the reasons for crane accident.

Or

- (b) Write short notes on :

- (i) Pre lifting plan and
- (ii) Job hazard analysis.

13. (a) State the uses of Hoists and industrial vehicles.

Or

- (b) What is hoist and give its control methods?

14. (a) What do you mean by Rigging and give its types?

Or

- (b) How you maintain Chain slings?

15. (a) Write about the powered industrial vehicles and their specific requirements.

Or

- (b) Discuss on Ergonomics and its effect on safety.

Part C

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Brief the advantages of material handling.

Or

- (b) Describe the precautions to be taken in manual material handling.

17. (a) How cranes are maintained?

Or

- (b) Why signalling is important on crane operation?

18. (a) Give your suggestions for good conveyor maintenance.

Or

- (b) Discuss about lubrication and its types.
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C-5799

Sub. Code

91024

B.Sc. DEGREE EXAMINATION, APRIL 2022

Second Semester

Fire and Industrial Safety

CHEMICAL SAFETY

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define 'Safety'.
2. Slate the types of Chemicals.
3. What do you mean by 'Hazard'?
4. Name few hazardous chemicals.
5. Point out the requirements for storage of harmful chemicals.
6. Mention the hazards expected during chemical storage.
7. Brief PHA.
8. What is LPG?
9. Write few general lab rules.
10. List various types of hazards.

Part B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Write short notes on risks in chemical handling.

Or

- (b) What are the physical hazards expected during handling of chemicals?

12. (a) Classify hazardous chemicals with their effects.

Or

- (b) Stress the Functions of Emergency information panel.

13. (a) Describe the safe methods of chemical storage.

Or

- (b) Differentiate toxic and corrosive substances.

14. (a) Explain the Process hazard analysis.

Or

- (b) What do you mean by Emergency Preparedness?

15. (a) State the supervisor's responsibility on chemical analysis.

Or

- (b) Discuss about safety associated with Lab instruments.

Part C

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Brief various risks related with the storage of hazardous chemicals.

Or

- (b) How you safely handle the Bio hazards and Radioactive hazards?

17. (a) Brief PPE for chemicals.

Or

- (b) Stress the importance of personal protection in chemical handling.

18. (a) Give the recommended practices for handling and storage of LPG.

Or

- (b) Explain the harmful chemical waste disposal in details.

C-5800

Sub. Code

91025

B.Sc. DEGREE EXAMINATION, APRIL 2022

Second Semester

Fire and Industrial Safety

INDUSTRIAL HYGIENE

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** the questions.

1. Define 'Hygiene'.
2. State the various systems functioned in our body.
3. What do you mean by 'Noise'?
4. Name few diseases on lagging of hygiene.
5. What is 'Toxicology'?
6. Write down the effect of toxic material.
7. Shortly explain the term 'Ergonomics'.
8. What CTS means?
9. Why sampling is needed?
10. What do you understand from the word 'HAVC'?

Part B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Explain atleast two of the system in our human body.

Or

- (b) Give a brief introduction to Industrial Hygiene.

12. (a) Write noise and vibration effect on human beings in detail.

Or

- (b) Brief physical hazard diseases and their remedies.

13. (a) State the Fundamentals of 'Toxicology'.

Or

- (b) List out the effect of toxic materials.

14. (a) Write an introduction to 'Ergonomics'.

Or

- (b) Discuss about the factors affecting the performance of physical tasks.

15. (a) Why sampling is required? Give a brief explanation.

Or

- (b) Why urine, blood, breath and vision tests are conducted?

Part C

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Explain the relationship between health and industrial hygiene.

Or

- (b) How we control various physical hazards?

17. (a) State the importance of Ventilation and types.

Or

- (b) List out various diseases due to toxic substances.

18. (a) Justify the effects of Manual handling and Repetitive works with their remedies.

Or

- (b) Discuss about the importance of ergonomics to improve work place safety.
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C-5801

Sub. Code

91026

B.Sc. DEGREE EXAMINATION, APRIL 2022

Second Semester

Fire and Industrial Safety

PRINCIPLES OF SAFETY MANAGEMENT

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** the questions.

1. What do you mean by 'Safety'?
2. Write few words about 'Management'.
3. List out the types of 'Audit'.
4. State the purpose of Audit.
5. Mention various types of accidents.
6. Why accident occurs?
7. Define 'Monitoring'.
8. Write about 'Frequency Rate'.
9. Stress the importance of 'Training'.
10. Why training is required?

Part B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Write about General Concepts of Management.

Or

- (b) Brief the role of supervisors in Safety.

12. (a) Elaborate the concepts of Safety Audit.

Or

- (b) Explain NCR.

13. (a) State the concepts of accidents in details.

Or

- (b) Discuss about 'Domino Sequence' with an example.

14. (a) What is ANSI? Give few of its recommended practices for compiling and measuring work injury.

Or

- (b) Write short notes on (i) Frequency Severity Indices and (ii) incident Rate.

15. (a) How you identify the training needs?

Or

- (b) Do motivation and communication promote Safety? Clarify.

Part C

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Why safety is required? State the role of workers to promote safety in an industry.

Or

- (b) How Incident Recall Technique is very useful to enhance safety? Give an example.

17. (a) List out your ideas to minimize accidents.

Or

- (b) Discuss about safety committee and its necessity.

18. (a) How training helps to improve safety?

Or

- (b) As a safety officer how you improve safety aspects in your industry

C-5802

Sub. Code

91032

B.Sc. DEGREE EXAMINATION, APRIL 2022

Third Semester

Fire and Industrial Safety

INDUSTRIAL SAFETY AND LEAN CONCEPTS

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define Accident.
2. Define Audit.
3. How does a building Collapse?
4. What is ergonomics?
5. Define NDT.
6. What are Radiation Hazards?
7. Define static electricity.
8. Define Benchmarking.
9. What is poor Housekeeping?
10. Define WAR ROOM.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the purpose, procedure and types of safety inspection.

Or

- (b) Explain about the cost of accidents and accident reports.

12. (a) Explain the documents to be examined during safety audit.

Or

- (b) Write notes about building design and Fire protection.

13. (a) Write about cost of accidents.

Or

- (b) Write notes on Industrial Toxicology.

14. (a) Explain about the plan for handling major emergencies.

Or

- (b) Explain about manual handling.

15. (a) Briefly explain about accident reports and records.

Or

- (b) Explain about art of KAIZEN (PDCA).

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the safety responsibilities of Safety officers and workers in workplace.

Or

- (b) Explain in detail about site layout, planning, design and failure of a building.

17. (a) Explain about Air and Breathing, Lighting and vision, noise and Hearing, Vibration and Heat.

Or

- (b) State the advantages of good Housekeeping and 5S concepts.

18. (a) Explain brief about the Lifting equipment's.

Or

- (b) Write notes on five why technique and Ishikawa diagram.
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C-5805

Sub. Code

91035

B.Sc. DEGREE EXAMINATION, APRIL 2022

Third Semester

Fire and Industrial Safety

**INCIDENT PREVENTION, CONTROL INVESTIGATION
AND REPORTING**

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What are the Causes of Accident?
2. What is Hazard?
3. Define Birds Triangle.
4. State the Hierarchy of accident control measures.
5. State multi causation theory.
6. What is disability?
7. Define Elimination.
8. State Accident Proneness theory.
9. What is partial disablement?
10. Define AEB Method.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write notes on accident reporting to internal management.

Or

- (b) Draw the Hierarchy of control triangle.

12. (a) Explain the process of accident Investigation.

Or

- (b) Explain the Biased Liability theory.

13. (a) Explain about reportable and non reportable accidents.

Or

- (b) Explain methods of accident investigation.

14. (a) Brief the classification of accidents.

Or

- (b) Explain the accident record maintenance in a workplace with evidence.

15. (a) Describe about the scheduled charges for disabilities.

Or

- (b) Create a sample accident register with relevant needed information.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the accident reporting as per Factories Act 1948.

Or

- (b) Explain about Hierarchy of accident control.

17. (a) Explain in detail about disability, its types and severity of disability.

Or

- (b) Write notes on methods of accident investigation process.

18. (a) Write notes on accident causation theories.

Or

- (b) Explain in detail about SCAT and STEP method of accident investigation.
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C-5806

Sub. Code

91042

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fourth Semester

Fire and Industrial Safety

FIRE DESIGN ENGINEERING

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What are the reasons for Fire?
2. Mention the types of fires.
3. Define Fire Load.
4. What are the hazards involved in fire system installation process?
5. Define heat transfer?
6. What is sprinkler?
7. Mention the teams involved at the time of fire.
8. Illustrate the correct procedure, for operating a fire extinguisher.
9. Define Smoke and Heat detector.
10. Define flame?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Brief the types of fire extinguishers.

Or

- (b) Write short notes on classes of fire with example.

12. (a) Explain the Hose reel drum and Hose reel training.

Or

- (b) Brief the NBC classification based on occupancy.

13. (a) Describe about the sprinkler system installation.

Or

- (b) Brief about the fire fighting techniques.

14. (a) Brief about the communication techniques for fire technicians at the time of fire.

Or

- (b) Explain about foam suppression system.

15. (a) State the principle and installation of fire pump room.

Or

- (b) Describe the basics of electrical and electronics system in fire alarm system.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about types of fires based on size and manners.

Or

- (b) Explain about the types, installation, service and maintenance of fire extinguishers.

17. (a) Explain about fire alarm technology.

Or

- (b) Write notes and Fire hydrant system.

18. (a) Explain features of under explosive act 8 rules.

Or

- (b) Explain suppression system based on CO₂.
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C-5807

Sub. Code

91043

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fourth Semester

Fire and Industrial Safety

PROCESS SAFETY MANAGEMENT

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define block flow diagram.
2. What is called maximum intended inventory?
3. List any two limitation of PHA.
4. Explain FTA.
5. Write short notes on compliance audit.
6. Define the term mechanical integrity.
7. What is called trade secrets?
8. Write the objectives of incident investigation.
9. Write the major duties of safety officer.
10. What is called emergency response?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on electrical classification.

Or

- (b) Write the importance of ventilation system.

12. (a) Describe FMEA in detail.

Or

- (b) Write the limitation of FTA.

13. (a) Write short notes on quality assurance.

Or

- (b) Explain the importance of safety training.

14. (a) Discuss about investigation questionnaire in detail.

Or

- (b) Discuss about the merits of employee participation.

15. (a) Write short notes on emergency planning.

Or

- (b) Elaborate the importance of work permit.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss the hazards of regulated substance in detail.

Or

- (b) Explain the type of training and its objectives in detail.

17. (a) Describe the incident investigation procedures in detail.

Or

- (b) Describe any one safety awareness method to improve process safety.

18. (a) Explain the principal responsibilities of contractor employer in detail.

Or

- (b) Discuss emergency planning and response in detail.

C-5808

Sub. Code

91044

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fourth Semester

Fire and Industrial Safety

**HAZARD IDENTIFICATION, RISK ASSESSMENT
AND RISK CONTROL**

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define ALARP
2. Define Risk matrix.
3. What are the key elements of JSA?
4. List few potential hazards in construction site.
5. Define HAZAN.
6. Write the merits of ETA.
7. Write the purpose of AIR.
8. What is called root cause analysis?
9. What is Safe activity rate?
10. Define risk management.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain about hazard identification.

Or

(b) Write the five steps of HIRA.

12. (a) Why JSA is requires? Write the benefits of JSA.

Or

(b) Write short notes on responsible person.

13. (a) Explain in detail about the effects of FMEA.

Or

(b) Explain in detail about SOP.

14. (a) Differentiate corrective action and preventive action.

Or

(b) Explain the following:

(i) Safety calculation

(ii) Non reportable accidents

15. (a) Write short notes calculation of accident indices.

Or

(b) Write the types of disabilities with example.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss about the evaluation of hazard and risk analysis.

Or

- (b) Discuss human reliability analysis in detail.

17. (a) Describe the importance of HAZOP.

Or

- (b) Discuss safety instrumentation system in detail.

18. (a) Explain in detail about "Tsunami" case study.

Or

- (b) Explain in detail about the Safety professional roles and responsibilities.
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C-5809

Sub. Code

91045

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fourth Semester

Fire and Industrial Safety

SAFETY INSPECTION AND AUDIT

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Explain the duties of inspection team.
2. Write the qualification of a safety inspector.
3. Write short notes on site activities.
4. List the documents used in pre audit.
5. Write the objectives of environmental policy
6. Mention the benefits of EIA.
7. Explain the principle of OH & S policy.
8. Explain the accident report.
9. What is short time action plan?
10. Write any two key changes in ISO 45001.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the procedures to identify unsafe condition of workers.

Or

- (b) Explain the procedures of safety inspection.

12. (a) Write short notes on pre audit activities.

Or

- (b) Write short notes on post audit activities.

13. (a) What are the principles and guidelines of ISO 14040?

Or

- (b) Explain in detail about ISO 14020.

14. (a) Describe the audit checklists and reports.

Or

- (b) Explain in details about elements of OS & H system.

15. (a) Explain the structure and features of OHSAS 18001 : 2007.

Or

- (b) Distinguish between ISO 14001 : 1996 and ISO 9001 : 1994.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) What are the various steps involved in developing an Inspection Report? Make a sample report.

Or

- (b) Discuss the roles and responsibilities of a safety officer in detail.
17. (a) List out the benefits of OSHA standard and certification. Write down the features of OSHA standard.

Or

- (b) Explain the guidelines, developments, procedure and content of OH and S policy.
18. (a) Explain the health audit in detail.

Or

- (b) Discuss the types of records to be examined during the safety audit.
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C-5810

Sub. Code

91051

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fifth Semester

Fire and Industrial Safety

SAFETY IN HIGH HAZARDOUS AREAS

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Give the classification of industrial equipment.
2. Differentiate: Gas and vapor.
3. Write the examples of emission source.
4. What is NFA?
5. Define: Permissible hot spot temperature.
6. What do you mean by corona discharge associated with electrical equipment?
7. Write about isolation method of hazard control.
8. What is pneumatics?
9. Define: Ionizing radiation.
10. Write the hazards of static electricity.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain in detail about explosion proof equipment.

Or

- (b) Write about online monitoring expert systems.

12. (a) Give the procedure for classification of hazardous areas.

Or

- (b) Explain the design regulations for explosion proof equipment.

13. (a) Write about safety hazard of electrical faults.

Or

- (b) Explain: Investigation of electrical accidents.

14. (a) Write a short note on fibre optics.

Or

- (b) Explain in detail about hermetic sealing.

15. (a) Write about intrinsically safe barrier types.

Or

- (b) Write about Intrinsic safety advantages.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss in detail about expert systems for maintenance and troubleshooting.

Or

- (b) How to determine the degree of emission source? Explain.

17. (a) Write about faults in electrical equipment.

Or

- (b) Explain in detail about dust ignition proof enclosure.

18. (a) Differentiate: Passive barriers and isolated barriers.

Or

- (b) Write a short note on sand filled installations.
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C-5811

Sub. Code

91052

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fifth Semester

Fire and Industrial Safety

SAFETY IN OIL AND GAS INDUSTRIES

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define Injury.
2. Write about safety induction training.
3. What is Confirmed Space?
4. Define JSA.
5. What are the hazards of hot work?
6. Define Scaffolding.
7. What is material handling?
8. Define fatality.
9. Define near miss.
10. State fire extinguisher operation method.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain Emergency Response Procedure at oil and gas industry.

Or

- (b) Write about personal pre check in oil and gas industry.

12. (a) Brief: Compressed gas cylinders.

Or

- (b) Explain about signals, displays, safety signs.

13. (a) Explain Preliminary Hazard analysis.

Or

- (b) Explain the categories of human factors accident cause in oil and gas industry.

14. (a) Explain about Bohai 2 oil accident.

Or

- (b) Discuss the recommendation to reduce fatal accidents in oil and gas industry.

15. (a) Write a short notes on confined space.

Or

- (b) Write notes on accident databases in oil and gas industry.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain about occupational stress and human error.

Or

- (b) Write in detail about oil and gas industry and its safety measures.

17. (a) Explain any one offshore industrial accident as case study.

Or

- (b) Write in detail about HAZOP.

18. (a) Explain about offshore oil and gas rigs accident analysis and failures.

Or

- (b) Explain in detail about the Glomar java sea drillship accident.
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C-5812

Sub. Code

91053

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fifth Semester

Fire and Industrial Safety

**SAFETY ASPECTS IN INDUSTRIAL PLANT LAYOUT
DESIGN**

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define NDT testing.
2. Define : Equipment Layout.
3. What is ventilation?
4. What is LEV?
5. What is manual handling?
6. Mention the benefits of good housekeeping.
7. What is conveyor?
8. Define : Team lifting and carrying.
9. Write about types of hoisting apparatus.
10. What is Ergonomics?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss the importance of standards and codes of practice for plant and layout.

Or

- (b) Explain about selection of plant locations.

12. (a) Explain about workstation material handling.

Or

- (b) Brief about the location for waste treatment and disposal.

13. (a) Write a short notes on facility design, procedure and planning strategies.

Or

- (b) Explain about Hood and duct design.

14. (a) Explain the steps to prevent common injuries in manual material handling.

Or

- (b) Explain the safe location of chemical storage.

15. (a) Explain about conveyor safety.

Or

- (b) List the inspection and maintenance of lifting equipment's.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the plant layout and location for nuclear and thermal power stations.

Or

- (b) Explain the plant layout and location for pharmaceuticals and food processing industry.

17. (a) Write short notes on ergonomic considerations of material handling.

Or

- (b) Explain the Industrial operations and design of computerized layout and analytical methods.

18. (a) Explain in detail about material handling.

Or

- (b) Illustrate in detail about ventilation and lighting at workplace.
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C-5813

Sub. Code

91054

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fifth Semester

Fire and Industrial Safety

SAFETY IN LOGISTICS AND WAREHOUSE SAFETY

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define Logistics.
2. Mention the types of warehouse.
3. What is TREM?
4. Mention few slogans in driver cabin.
5. What is the purpose of forklift in warehouse industry?
6. Define stacking.
7. Define quantitative analysis.
8. List out few lifting equipments.
9. Mention the types of portable Fire extinguishers.
10. Differentiate between Logistics and Warehouse.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) List the Safety measures to be followed in transportation of Hazardous goods.

Or

- (b) Explain types of Warehouse.

12. (a) Explain about Lifting equipment Safety.

Or

- (b) Explain about forklift Safety.

13. (a) Explain about the working principle of EOT Crane with neat sketch.

Or

- (b) Write short notes about design of tanker Lorries.

14. (a) Explain about the Lifting chain defects and its maintenance.

Or

- (b) Write about fork lift inspection and maintenance.

15. (a) Explain the replacement of halon with safer substitutes.

Or

- (b) Write note on determination of fire load.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain about selection of drivers, their responsibility and driver Safety programme.

Or

- (b) Explain in detail WMS with its need, function, types and strategies.

17. (a) Explain safe practices of warehouse.

Or

- (b) Explain about the Transportation of Hazardous goods.

18. (a) Write in detail about Fire Fighting system.

Or

- (b) Explain about cranes, its types, functions, inspection and maintenance.

C-5816

Sub. Code

91055C

B.Sc. DEGREE EXAMINATION, APRIL 2022

Fifth Semester

Fire and Industrial Safety

SAFETY IN MINING INDUSTRIES

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is primitive system?
2. Define conveyors.
3. Define Fire and explosion.
4. What is multi gas detector?
5. Define Atmosphere pollution.
6. What is guarding of machines?
7. Mention few noise hazards in mining industry.
8. What is risk assessment?
9. Define FME.
10. Define disaster.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the cause and prevention of accidents from Heavy machinery and Electrical systems in open cast mines.

Or

- (b) Write short notes on Handling of explosives.

12. (a) Brief about the Hazards involved in underground mines.

Or

- (b) Explain the prevention and control measures of Fire and explosion in mining industry.

13. (a) Explain the Hazards of ground collapse.

Or

- (b) Write notes on ventilation and Lighting.

14. (a) Discuss about the reliability and Hazard potential of Risk Assessment.

Or

- (b) Write short notes on the quantitative structure of Risk Assessment.

15. (a) Explain the types of injury can occur in mining process.

Or

- (b) Explain the Safety measures for impressing safety in mines.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about the operations of opencast mines.

Or

- (b) Explain about the underground mines.

17. (a) Explain about Tunnelling process.

Or

- (b) Write notes on Fuzzy model for Risk assessment.

18. (a) Explain in detail about accident analysis and management in mining Industry.

Or

- (b) Write notes on disaster management.
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C-5818

Sub. Code

91061

B.Sc. DEGREE EXAMINATION, APRIL 2022

Sixth Semester

Fire and Industrial Safety

SAFETY MANAGEMENT SYSTEM

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What is Safety Induction Training?
2. Define Near Miss.
3. What is MIS?
4. State Haddon's Principle.
5. What is motivation?
6. Define Tool Box Talk.
7. State modern methods of Safety Training.
8. What is manageable Communication?
9. Mention the purpose of employee participation in Safety.
10. Define Safety culture.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain the use of IT tools in managing SHE tools.

Or

- (b) Write short notes on role of management and management principle of OSHAS / IS-18001.

12. (a) Brief about Managenal Communication.

Or

- (b) Explain the effective planning for Safety.

13. (a) Discuss about job Instructions VS Safety instructions.

Or

- (b) Explain the modern methods of Safety training.

14. (a) Discuss about the Human factors contributing to Accidents and control measures.

Or

- (b) Write short notes on modern methods and Techniques of Safety promotion.

15. (a) Discuss about the perception of danger and acceptance of Risk.

Or

- (b) Explain about theories of motivation and their application of safety.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the use of modern methods of programming.

Or

- (b) Explain about the theories of accident occurrences in detail.

17. (a) Supervisors, Workers, contractors and visitors.

Or

- (b) Explain in detail about effective planning organisation structure for Safety Department.

18. (a) Write notes on theories of motivation and their application of Safety.

Or

- (b) Explain the behavioural Safety and Psychological aspect of safety.
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C-5819

Sub. Code

91062

B.Sc. DEGREE EXAMINATION, APRIL 2022

Sixth Semester

Fire and Industrial Safety

COMPUTER AIDED HAZARD ANALYSIS

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. List out any four risk issues.
2. What is safety audit?
3. State thermo calorimetry.
4. Define MIE.
5. Draw any three logic symbols.
6. State HAZAN.
7. What is Gas and vapour?
8. Define two phase release.
9. What is the process failure in seveso disaster?
10. What is Rijnmond report?

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain in detail about social benefits vs technological risk.

Or

- (b) Explain briefly about what if analysis.

12. (a) Write short notes on DSC.

Or

- (b) Explain the procedure used to conduct the explosion test.

13. (a) Explain in detail about basic concepts of reliability.

Or

- (b) Write short notes on modules of heat radiation.

14. (a) Explain the logics used in consequence analysis.

Or

- (b) Give short hint on chemical inventory analysis.

15. (a) Write short notes on Mexico disaster.

Or

- (b) Write short note on Convey report.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain the procedure involved in HAZOP study with guide words.

Or

- (b) Explain in details about RSST.

17. (a) Explain the methodology used in risk analysis quantification.

Or

- (b) Write short notes on hazard identification method based on properties of chemicals.

18. (a) Explain in detail about damage distances on plant layout.

Or

- (b) Write short notes on Feyzin disaster.
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C-5820

Sub. Code

91063

B.Sc. DEGREE EXAMINATION, APRIL 2022

Sixth Semester

Fire and Industrial Safety

**BEHAVIOUR BASED SAFETY AND INDUSTRIAL
ERGONOMICS**

(2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Define Ergonomics.
2. What are the economic benefits of ergonomics?
3. Expand FJM and FMJ.
4. What is the maximum load to be carried by man, woman, adolescent, boy and girl?
5. List out the emergency control design for fast actions.
6. Mention the types of learners.
7. Define the group in organization.
8. What is team building?
9. Define group decision making.
10. Define anthropometry.

Part B

(5 × 5 = 25)

Answer **all** questions.

11. (a) Explain with neat diagram FOCUS OF ERGONOMICS.

Or

- (b) Brief notes on basic body mechanics.

12. (a) Write a brief note on / history of Ergonomics.

Or

- (b) Give notes on group decision making techniques.

13. (a) Explain the Safety coaching through observation and feedback.

Or

- (b) Explain seven lesson from behaviour based safety for increasing PPE use.

14. (a) Write a brief note on material handling storage.

Or

- (b) Share your view of future direction for ergonomics.

15. (a) Explain job stress and its effects.

Or

- (b) Explain auditory controls and designs of controls.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Explain Ergonomics areas of application in the work system.

Or

- (b) Write about the risk factors for musculo skeletal disorder in workplace.

17. (a) List out the hand tools along with their ergonomic importance.

Or

- (b) Write note on effective and cost effectiveness of human factor engineering.

18. (a) Explain Personality, types and Factor Influencing personality.

Or

- (b) Explain detail about ABC model of behaviour change.
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C-5664

Sub. Code

**16/17/23/25/
26/27/29**

**Common for All U.G. B.Sc./B.B.A. DEGREE
EXAMINATION, APRIL 2022**

First/Second Semester

ENVIRONMENTAL STUDIES

(2019/2020 onwards)

Duration : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** the questions.

1. ZSI.
2. WII.
3. What is renewable energy?
4. Food web.
5. Pyramid of numbers in aquatic ecosystem.
6. Red data book.
7. List out any five Endemic species of India.
8. List out marine pollutants.
9. *Ex Situ* Conservation.
10. Enlist Option Values of Biodiversity.

Part B

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Write notes on definition, scope and importance of environmental studies.

Or

- (b) Write notes on soil erosion and desertification.

12. (a) Write notes on energy flow in the ecosystem.

Or

- (b) Write notes on threads to biodiversity.

13. (a) Write notes on Biodiversity at Global, National and Local levels.

Or

- (b) Write notes on various strategies of conservation of Biodiversity.

14. (a) Write notes on ecological pyramids.

Or

- (b) Write notes on air pollution.

15. (a) Write notes on noise pollution.

Or

- (b) Write notes on effects and control measures of nuclear hazards.

Part C

(3 × 10 = 30)

Answer **all** questions.

16. (a) Write an essay on the multidisciplinary nature of Environmental Studies.

Or

- (b) Write an essay on the following resources with special emphasis to how they are overexploited/utilized which in turn damage the environment, (i) Forest Resources and (ii) Food Resources.

17. (a) Write an essay on “India is a mega-diversity nation”.

Or

- (b) Write an essay on Biodiversity and their values.

18. (a) Write an essay on causes, effects and control measures of (i) Marine Pollution and (ii) Water Pollution.

Or

- (b) Write an essay on concept, structure and function of ecosystem.