C–8615	Sub. Code
	30721

M.B.A. DEGREE EXAMINATION, APRIL 2023.

Second Semester

Environment and Industrial Safety

EHS ACTS, LAWS AND REGULATIONS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Write short notes on approval of factories.

2. What is the role of safety officers?

3. Write short notes on hours of work.

4. Define muster roll.

5. What is the prevention and control of pollution?

6. Write short notes on hazardous chemicals.

7. Discuss the e-waste.

8. What are the sources of biomedical wastes?

9. What do you mean by job satisfaction?

10. Explain objectives of organizational development.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Illustrate the fencing of machinery in detail.

Or

(b) What are the provisions? Infer the special condition to the factories.

12. (a) Explain in detail about welfare measures for building workers.

Or

(b) Infer and summarize about poisoning and occupational disease.

13. (a) Summarize the water pollution act.

Or

(b) What is the national environmental tribunal act? Explain in short.

14. (a) Explain in detail about the Batteries Management Act, 2001.

Or

(b) Summarize the handling rules for bio-medical wastes.

15. (a) How do you connect the dangerous machine act and the safety of workers?

Or

(b) Describe noise rules. What is the primary source of noise in industries?

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) List out the importance of cleanliness in a factory and infer the disposal of waters and effluent.

Or

(b) What do you mean by artificial humidification, and discuss it in detail?

17. (a) Explain in detail about registration for overtime, wages, and employment for construction workers.

Or

(b) Write short notes on the air act of 1989 and the Environmental Act of 1986.

18. (a) Infer the importance of handling e-waste and summarize the battery handling rules.

Or

(b) Summarize the static and mobile pressure vessels rules, 1981.

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C–8616	Sub. Code
	30722

M.B.A. DEGREE EXAMINATION, APRIL 2023.

Second Semester

Environment and Industrial Safety

INTERNATIONAL MANAGEMENT OF HEALTH AND SAFETY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. List the role of external agencies.

2. What is a safety policy?

3. Distinguish Employer and Employee?

4. Define safety.

5. What is a health and safety culture?

6. Write short notes on effective communication.

7. What are all health risks?

8. Proactive monitoring – discuss shortly.

9. List the function of ILO.

10. Mention the basic elements of the safety management system.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Discuss in detail about managing safety.

Or

(b) Briefly explain the health and safety at work act 1974.

12. (a) Explain — Supply chain.

Or

(b) Who are safety representatives? Discuss their role and importance in detail.

13. (a) How human factors influence safety performance?

Or

(b) Summarize the legal aspects of risk assessment.

14. (a) Explain in detail about first aid at work.

Or

(b) Briefly discuss about reactive monitoring.

15. (a) Explain in detail about ILO-OSH 2001.

Or

(b) Summarize the major occupational health and safety management systems.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) What do you understand about the review of health and safety policy? Explain in detail with sufficient information.

Or

(b) Explain in detail about typical manager's organizational responsibilities.

17. (a) Summarize the objective of risk assessment and explain the risk assessment process.

Or

(b) What are the review and audit? And explain briefly with the necessary information.

18. (a) Briefly discuss about ILO conventions and recommendations.

Or

(b) Essentials of health and safety at work – discuss in a detailed manner with relevant data.

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C–8617	Sub. Code
	30723

M.B.A. DEGREE EXAMINATION, APRIL 2023.

Second Semester

Environment 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. List the accessories for manual handling.

2. How to prevent ourselves from common injuries?

3. Name any two important reasons for crane accidents.

4. What is pre lifting plan?

5. Write short notes on floating cranes.

6. Shortly discuss about overhead hoist.

7. Mention the types of slings.

8. Define rope lay.

9. Define ergonomic.

10. Distinguish truck and industrial truck.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Explain the problems with hazardous materials.

Or

(b) How to handle heavy objects in the industry with safety - briefly discuss.

12. (a) Briefly discuss about annual inspections.

Or

(b) Write short notes on hand signals signaling devices.

13. (a) How to do the testing and maintenance for derricks?

Or

(b) Write short notes on the hoist limit and discuss the importance and need.

14. (a) Explain in detail about wire rope life.

Or

(b) Describe shortly about Metal mesh slings.

15. (a) Write the need of an escalator and discuss its types in detail.

Or

(b) How to do the inspection and maintenance for gasoline-operated trucks?

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Briefly discuss about team lifting and carrying.

Or

(b) Explain — third-party inspection.

17. (a) Summarize off-road vehicles.

Or

(b) Define rigging and discuss about rigger and types of slings in detail.

18. (a) Briefly explain - the operating principles and requirements of powered industrial trucks

Or

(b) Elaborately discuss about the safety in material handling.

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C–8618	Sub. Code
	30724

M.B.A. DEGREE EXAMINATION, APRIL 2023.

Second Semester

Environment and Industrial Safety

ENVIRONMENTAL STUDIES

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List out segments of atmosphere.

2. What is the importance of environmental studies?

3. List out some non-renewable resources.

4. Mention some causes of deforestation.

5. What is an ecosystem?

6. Define genetics.

7. Define pollution.

8. What are the effects of nuclear pollution?

9. What is acid rain?

10. List types of wasteland.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss the environmental problems and need for public awareness.

Or

(b) What are some alternative solutions that we can observe to conserve the environment? and discuss them in detail.

12. (a) Classify natural resources and describe each type in detail.

Or

(b) Explain in detail about natural resources and associated problem.

13. (a) Explain in detail about the value of Biodiversity.

Or

(b) List out biodiversity threats and discuss in detail.

14. (a) What are the causes of air pollution? Explain them in detail.

Or

(b) Discuss control measures for soil pollution.

15. (a) Describe the management of radioactive waste.

Or

(b) Discuss assessing methods of various types of lands.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Write down the scope of environmental studies and discuss them in detail.

Or

(b) Discuss the major activities in the forest in detail.

17. (a) Illustrate and explain the hydrological cycle with a neat sketch.

Or

(b) Explain in detail about in-situ and ex-situ conservation of Biodiversity.

18. (a) What is marine pollution? Discuss its effect and control measures.

Or

(b) Explain the method of inspecting polluted sites.

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C–8619	Sub. Code
	30625A/30725A

M.B.A./M.Sc. DEGREE EXAMINATION, APRIL 2023

Second Semester

SAFETY IN OIL AND GAS INDUSTRY

(Common for M.B.A. (E&IS)/M.Sc. (ISH))

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is the necessary for safety in the oil and gas industry?

2. Define bathtub hazard curve.

3. Define operability analysis.

4. What is preliminary hazard analysis?

5. Why is it necessary to maintain high safety procedures in offshore oil plants?

6. Mention any four offshore oil industry accidents.

7. Define group factor.

8. Define well control incident database.

9. What is a performance measurement project?

10. Mention some corrective measures in maintaining safety in oil plants.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Explain in detail about the hazard and operability analysis.

Or

(b) Discuss preliminary hazard analysis.

12. (a) Describe offshore accident-related causes.

Or

(b) Explain in detail about offshore industrial sector risk picture.

13. (a) Explain oil field fatality analysis.

Or

(b) Describe organizational and group factors associated with an accident in the oil industry.

14. (a) What is the Danish energy agency? and explain its contribution in detail.

Or

(b) Describe offshore oil and gas rigs accident analysis.

15. (a) Explain bathtub hazard curve with neat sketch.

Or

(b) Illustrate mechanical injuries and common causes of injuries in the oil and gas industry.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Describe accident causation theories.

Or

(b) Illustrate the techniques of operational review with interface and job safety analysis.

17. (a) Discuss any one major offshore oil industry accident case studies.

Or

(b) Discuss human factors that affect safety in the oil and gas industry and explain each factor with suitable examples.

18. (a) Explain in detail about emergency. and safety management in the oil and gas industry.

Or

(b) Illustrate various databases associated with offshore oil and gas industry accidents and explain them in detail.

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C–8620	Sub. Code
	30725B

M.B.A. DEGREE EXAMINATION, APRIL 2023

Second Semester

Environment and Industrial Safety

HUMAN PHYSIOLOGY AND ERGONOMICS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define ERGONOMICS

2. Classify posture.

3. What is job satisfaction?

4. List the motivational requirements.

5. What is work design?

6. What do you understand about the term Cost Effectiveness- discuss shortly.

7. Define Fatigue.

8. Man Vs. Machine - write short notes on it.

9. List the human skills.

10. What are auditory displays?

Part B $(5 \times 5 = 25)$

Answer **all** the questions.

11. (a) Briefly discuss about the biomechanical aspect of body movement.

Or

(b) Explain the risk factors for musculoskeletal disorders in the workplace.

12. (a) Describe the factors contributing to personality.

Or

(b) Write short notes on job Enrichment theory.

13. (a) Summarize the application of anthropometry in design.

Or

(b) Briefly discuss about Visual display units.

14. (a) Explain in detail about man as controller.

Or

(b) Write short notes on the following

(i) RULA

(ii) REBA.

15. (a) Explain in detail about the Design of Controls.

Or

(b) Describe briefly about Synthetic environment.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Briefly explain the following (i) pelvis (ii) spine.

Or

(b) What is BBS and Explain the learning principles and motivational requirements?

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

Or

(b) Explain in detail ergonomics interventions in repetitive works.

18. (a) Explain in detail about combining displays and controls with relevant data.

Or

(b) Define and explain human physiology.

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C–8621	Sub. Code
	30725C

M.B.A. DEGREE EXAMINATION, APRIL 2023.

Second Semester

Environment 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** the questions.

1. Define Risk.

2. What is risk ranking?

3. Write short notes on HAZID.

4. List the need for Risk estimation.

5. Differentiate qualitative and quantitative hazard analysis.

6. When and where is data collection required?

7. SIL standards — explain shortly.

8. What is the risk priority number?

9. Define erection

10. What is a safety instrumentation system?

Part B $(5 \times 5 = 25)$

Answer **all** the questions.

11. (a) Write short notes on safety instrumentation.

Or

(b) What do you understand about the risk matrix? Discuss it shortly.

12. (a) Discuss shortly about risk assessment.

Or

(b) Summarize various PHA methods and explain any one in detail.

13. (a) Write short notes on 'what if analysis."

Or

(b) Explain about layer protection analysis.

14. (a) Methodology of FMEA/FMECA - elaborate.

Or

(b) Analyze and explain the concepts of automated FMEA.

15. (a) How to perform the commission and validation? - Briefly analyze.

Or

(b) Explore and explain in detail about "Explosion Protection."

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Briefly discuss about hazard identification and write short notes on PHA.

Or

(b) What is risk management? and Briefly discuss about risk management.

17. (a) Describe in-depth — Fault Tree Analysis and list its significance with pertinent data.

Or

(b) Elaborately discuss about HAZOP methodology.

18. (a) Analyze and explain in detail about third-party certification of instruments.

Or

(b) Discuss in detail the process of risk control.

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C–8622	Sub. Code
	30741

M.B.A. DEGREE EXAMINATION, APRIL 2023.

Fourth Semester

Environment and Industrial Safety

SAFETY INSPECTION AND AUDIT

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. What is a safety inspection?

2. Per year how many times workplace inspection needs to be done?

3. List the important two objectives of the audit.

4. What is audit evidence?

5. Advantages of EIA.

6. What is environmental policy?

7. How to initiate OS and H Audit?

8. List the objectives of the health audit.

9. What is HLS?

10. Mention the important Features of OSHAS 18001.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Explain in detail about hazards in the workplace.

Or

(b) How to prepare the workplace inspection report? and discuss its importance.

12. (a) Briefly describe how to identify your strengths and weaknesses.

Or

(b) Explain briefly — "lnterviewing.'

13. (a) Elaborately discuss about audit methodology.

Or

(b) Discuss the importance of ISO 14000 and explain the steps in the audit.

14. (a) Write short notes on Audit Goals.

Or

(b) How to prepare the report? and Discuss in detail about report distribution.

15. (a) Briefly discuss about OH and S management system.

Or

(b) Explain in detail about key changes in ISO 45001.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Briefly discuss about follow up and monitoring with relevant information.

Or

(b) Explain in detail about the following (i) pre-audit activities. (ii) post audit activities.

17. (a) Discuss the general principles and stages of LCA in a detailed manner.

Or

(b) Elaborately discuss the following (i) Audit Completion (ii) Record Retention.

18. (a) Explain the principle, guidelines, and developments of OHSAS 18001.

Or

(b) Why do we need to conduct safety audits and inspections, and what are the benefits and drawbacks of each?

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C–8623	Sub. Code
	30742

M.B.A. DEGREE EXAMINATION, APRIL 2023

Fourth Semester

Environment and Industrial Safety

HAZARDOUS WASTE MANAGEMENT

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define hazardous waste.

2. What are secure landfills?

3. Define characterization of waste.

4. Write short notes on MSHSC rules 1989.

5. Write down the composition of radioactive wastes.

6. What are all the disposal options available for the nuclear industry?

7. What is the chemical treatment process for MSW?

8. Define air stripping in the treatment process.

9. What is the environmental risk?

10. Define landfill covers.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Discuss transportation of hazardous waste.

Or

(b) Explain in detail about remedial actions in waste management.

12. (a) Discuss fate and transport of chemicals.

Or

(b) Explain in detail about health effects due to hazardous waste.

13. (a) Discuss health hazards related to nuclear wastes.

Or

(b) Explain in detail about treatment and disposal of radioactive wastes.

14. (a) Discuss physiochemical processes for hazardous wastes.

Or

(b) Illustrate in detail about groundwater contamination and remediation.

15. (a) Discuss methods for assessment of environmental risk.

Or

(b) Explain in detail about landfill design for solid and hazardous waste.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Discuss the manifest system, storage, and treatment methods of hazardous waste.

Or

(b) Describe management and handling rules of fly ash and battery waste.

17. (a) Discuss the source of nuclear radiation with separation and transposition method.

Or

(b) Explain in detail about the chemical treatment process for MSW.

18. (a) Briefly discuss about the principles of biodegradation of toxic waste with metabolism, oxidative and reductive processes.

Or

(b) Explain in detail about landfill covers, incineration, and autoclave with disinfection method.

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C–8624	Sub. Code
	30743

M.B.A. DEGREE EXAMINATION, APRIL 2023

Fourth Semester

Environment and Industrial Safety

SAFETY MANAGEMENT IN HIGH HAZARDOUS AREAS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. How do identify hazardous industrial zones?

2. What is fame-proof equipment?

3. List the emission sources.

4. What is the continuous degree?

5. Identify the purpose of nitrogen-filled equipment.

6. What is SF_6?

7. Define Intrinsic safety.

8. List the need for hermetic sealing.

9. Describe the investigation method during an electrical accident.

10. What do you mean by intrinsic safety?

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Elaborately discuss about non-sparking equipment with necessary information.

Or

(b) Explain in detail about expert systems for safety assurance.

12. (a) Classify hazardous area and discuss them briefly.

Or

(b) Describe the following (i) first degree (ii) second degree.

13. (a) What is safe equipment? And discuss it briefly.

Or

(b) Briefly discuss about permissible hotspot temperature.

14. (a) Analyze the restricted breathing in a detailed manner.

Or

(b) Define energy and briefly discuss the encapsulation.

15. (a) Explain in detail about the electric arc.

Or

(b) List the advantages of intrinsic safety.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Write the need, significance, and uses of online monitoring expert systems with necessary information.

Or

(b) Briefly discuss the following (i) IEC (ii) NFA.

17. (a) Explain in detail about the investigation of the final report and the safety hazard of electrical faults.

Or

(b) Briefly discuss the need, significance, and uses of pressurization.

18. (a) Explain in detail about safe barrier types.

Or

(b) Merits and demerits of investigation and discuss in detail about final report investigation.

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C–8625	Sub. Code
	30744

M.B.A. DEGREE EXAMINATION, APRIL 2023

Fourth Semester

Environment and Industrial Safety

SAFETY IN INDUSTRIAL PLANT LAYOUT DESIGN

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. What is the safety layout?

2. Purpose of security towers.

3. Define LPG.

4. How to identify the location for disposal?

5. Application of computerized layout.

6. Identify the uses of lifting devices.

7. Advantages of good illumination.

8. Effects of glare-discuss shortly.

9. What are arresting gears?

10. How to handle heavy objects safely?

Part B $(5 \times 5 = 25)$

Answer **all** the questions.

11. (a) Explain in detail about fire service rooms.

Or

(b) List the importance of standards and codes of practice for the plant.

12. (a) Briefly discuss the selection of plant locations.

Or

(b) Write short notes on Explosives.

13. (a) Discuss the quantitative models briefly with the required information.

Or

(b) Describe the following :

(i) CIM

(ii) SCM.

14. (a) Write the need and importance of good ventilation.

Or

(b) Discuss the cleaning methods elaborately with necessary data.

15. (a) What is slewing? And discuss in detail about slewing mechanisms.

Or

(b) Discuss the general safety consideration in material handling.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Briefly discuss the safety aspects and design considerations that need to be followed in nuclear power stations.

Or

(b) Explain the following :

(i) Radiography method

(ii) Eddy current method.

17. (a) What is facility design? and Briefly discuss the facility design procedure with necessary information.

Or

(b) Principles of 5s and discuss briefly.

18. (a) Describe the following :

(i) team lifting

(ii) rope fitting.

Or

(b) What are all the important points that need to be considered in mechanical material handling? and distinguish between manual and mechanical material handling.

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C–8626	Sub. Code
	30745

M.B.A. DEGREE EXAMINATION, APRIL 2023

Fourth Semester

Environment and Industrial Safety

INDUSTRIAL HYGIENE AND TOXICOLOGY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** the questions.

1. What is the Human system?

2. Define fuel processing.

3. Summarize the importance of ventilation.

4. List out some personal protective equipment.

5. What are nephrotoxic agents?

6. What do you mean by ACGIH threshold limit values?

7. Define tennis elbow.

8. What are the minimum requirements for workstations to prevent diseases?

9. Describe microorganisms.

10. Mentions the various tests performed for eyes and lungs.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Articulate the moving force in human physiology.

Or

(b) Classify the defense system and write down the importance of the system.

12. (a) Summarize the blood-borne diseases.

Or

(b) Describe the ventilation and list its importance in the industry.

13. (a) Discuss the cause and effect of blood damaging agents.

Or

(b) Write short notes on stages of toxicological evaluation.

14. (a) Describe the following in detail

(i) Tendinitis

(ii) MSD.

Or

(b) What are the factors affecting the performance of physical tasks?

15. (a) Write short notes on Audiometry.

Or

(b) What is air quality? Discuss the sampling methods.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Discuss the filtering system of human physiology.

Or

(b) Explain the source of noise and pressures in the industry and discuss their hazards.

17. (a) Write short notes on the isolation of sources and substitutions.

Or

(b) Describe in detail about toxic material in air and its effect on humans.

18. (a) Articulate WRULD, White finger, and carpal tunnel syndrome in detail.

Or

(b) Discuss in detail about skin, breath, and vision tests.

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C–8627	Sub. Code
	30746

M.B.A. DEGREE EXAMINATION, APRIL 2023

Fourth Semester

Environment and Industrial Safety

SAFETY IN AVIATION AND SHIPYARD

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. What is a dock labour board?

2. Identify the functions of safe committees.

3. What is hatch covers?

4. Purpose of pay loaders.

5. What are natural fiber ropes?

6. List the methods of rigging.

7. Define cranes.

8. What is unstacking?

9. Write short notes on cargo handling.

10. Discuss shortly about forklift.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Briefly explain about the roles of clearing and forwarding agents.

Or

(b) Explain the rules and regulations framed under the Act 1986.

12. (a) Briefly discuss about safety in chipping.

Or

(b) Elaborately discuss about internal combustible engines.

13. (a) Explain in detail about top lift trucks.

Or

(b) Define ropes and explain in detail about wire rope chains.

14. (a) Briefly discuss about Dock Railways.

Or

(b) Express the restriction of loading and unloading operations with the required in formation.

15. (a) Write short notes on the collapse of lifting appliances and their effects.

Or

(b) Express the need and significance of an on-site emergency plan.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Examine the 16 responsibilities of different agencies for safety and health.

Or

(b) Explain in detail about the storage types.

17. (a) List the types of lifting appliances and discuss them in a detailed manner.

Or

(b) How to perform testing, examination, and inspection of containers – discuss with relevant information.

18. (a) Describe the following :

(i) gas leakages

(ii) dangerous goods.

Or

(b) What are all the necessary safety things that need to be followed in aviation – discuss briefly.

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