C–7575	Sub. Code
	30711

M.B.A. DEGREE EXAMINATION, NOVEMBER 2022

First Semester

Environment And Industrial Safety

ORGANIZATIONAL BEHAVIOUR AND MANAGEMENT

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. What is the importance of organizational behavior?

2. Write short notes on organizational behavior models.

3. Define interpersonal perception.

4. List out the personality types.

5. Describe interpersonal relations in group behavior.

6. Write short notes on the emergency of informal leaders.

7. Describe power centers.

8. Classify the leadership styles.

9. Write short notes on organizational effectiveness.

10. What do you mean by stress in the workplace?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain in detail about the need and importance of organizational behavior.

Or

(b) Write short notes on the nature and scope of the framework.

12. (a) Discuss in detail about theories in analyzing the personality types.

Or

(b) Write short notes on factors influencing perception.

13. (a) Briefly discuss the influence and grout dynamics in group behavior.

Or

(b) Write short notes on group decision-making techniques.

14. (a) Discuss in detail about the importance of leadership.

Or

(b) Briefly classify leaders and managers in all organization.

15. (a) What do you mean by resistance to change? And how to manage the organizational change?

Or

(b) Write short notes on organizational development.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Explain in detail about organization behavior model.

Or

(b) Explain in detail about the learning process and types of learning.

17. (a) Briefly discuss the importance and effects of motivation on work behavior.

Or

(b) Discuss in detail about team building and interpersonal relations in group behavior.

18. (a) Write short notes on power centers with powers and politics.

Or

(b) Write short notes on the prevention and management of stress.

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C–7576	Sub. Code
	30712

M.B.A DEGREE EXAMINATION, NOVEMBER 2022

First Semester

Environment 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 is safety management?

2. Write short notes on a safety inspection.

3. Define non-conformity reporting.

4. Explain safety audit.

5. Classify reportable and non-reportable accidents.

6. List out the role of the safety committee.

7. What do you mean by permanent partial disability?

8. Define frequency severity incidence.

9. What is the role of the government in safety training?

10. What is the importance of training in safety education?

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Discuss in detail about planning for safety for optimization of productivity.

Or

(b) Explain in detail about safety inspection and safety sampling.

12. (a) Write short notes on the audit checklist and report.

Or

(b) Discuss in detail about the identification of unsafe acts and unsafe conditions.

13. (a) Briefly discuss about accident investigation and analysis.

Or

(b) Explain in detail about domino sequence and the cost of the accident.

14. (a) Write short notes on the frequency rate and severity rate of accidents.

Or

(b) Discuss incident rate and sale "T" score.

15. (a) Discuss the methods for promoting safety to prevent accidents.

Or

(b) Explain in detail about the role of government agencies in safety education and training.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Explain in detail about safety government and the evolution of modern safety concepts

Or

(b) Discuss the following terms (i) safety budgeting (ii) safety policy (iii) incident recall technique.

17. (a) Explain in detail about the review of inspection and remarks by government agencies in safety audit inspection.

Or

(b) Briefly discuss about principles of accident prevention and reporting to statutory authorities about accidents.

18. (a) Explain in detail about practices for compiling and measuring work injury experiences.

Or

(b) Briefly discuss the role of private Consulting agencies in safety training.

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C–7577	Sub. Code
	30713

M.B.A DEGREE EXAMINATION, NOVEMBER 2022

First Semester

Environment and Industrial Safety

FIRE SAFETY — DESIGN, INSTALLATION AND MAINTENANCE

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions.

1. What is auto-ignition temperature?

2. What are the classification of fire?

3. Write short notes on selection of fire extinguishers.

4. Write down some inspection techniques for fire extinguishers.

5. What are the general requirements of fire alarming system?

6. List any two types of flame detector.

7. Write down the procedure for hydrant installation.

8. List the maintenance checklist for fire hydrants.

9. Mention types of fire exits.

10. What is overlapping fire zones?

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write short notes on physical properties of fire.

Or

(b) Briefly discuss the mode of heat transfer.

12. (a) Write down the procedure for selection of location and initial inspection for fire extinguisher.

Or

(b) List the steps involved for maintenance of fire extinguisher.

13. (a) What are smoke detectors? And explain anyone in brief

Or

(b) What are tests done in detectors after a fire?

14. (a) What are the general requirements of the installation of a fire hydrant?

Or

(b) Explain fire pumps and pump house.

15. (a) Explain the capacity and arrangement of fire exits.

Or

(b) Write down the classification of the building based on occupancy.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Explain in detail about fire types and the process of fire spread.

Or

(b) Illustrate in detail about EDP installation in measures in the educational institution.

17. (a) Explain in detail about suitability of portable fire extinguishers.

Or

(b) Briefly discuss about fire detection zones and linear heat sensing cables.

18. (a) Illustrate in detail about various types of hydrant water tanks and pump houses.

Or

(b) Explain in detail about building classification based on occupancy and overlapping fire zones.

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C–7578	Sub. Code
	30714

M.B.A DEGREE EXAMINATION, NOVEMBER 2022

First Semester

ELECTRICAL AND CHEMICAL SAFETY

(Environment and Industrial Safety)

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define Power and mention its units.

2. Write the types of Electrical faults.

3. What is meant by Corona Effect?

4. Write the Voltage Classifications.

5. What is meant by System Grounding?

6. What is meant by Equipment Grounding?

7. Write the Indian Electricity Rule.

8. Write the earthing devices.

9. What is meant by Grouping of Gases?

10. What is meant by Equipment Certifying Agencies

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Explain (i) Inductor, (ii) Overloads and (iii) Short circuits.

Or

(b) Explain Hazards of Electricity.

12. (a) Explain heating effects of current.

Or

(b) Explain about Electromagnetic forces.

13. (a) What is meant by FRLs Insulation and Explain it?

Or

(b) Explain Miniature Circuit breaker.

14. (a) Explain Protection and Interlock.

Or

(b) Explain about Cabling and Cable joints.

15. (a) Explain about Electrical Apparatus used in Hazardous zones.

Or

(b) Explain about Classification of Equipment used in Hazardous Locations.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Explain in detail about various Hazard Analysis, due to Electrical Equipment and its accessories.

Or

(b) Explain in detail about Statutory requirements from Electrical Inspectorate.

17. (a) Explain about (i) Earth Leakage Circuit breaker (ii) Ground Fault Circuit Interrupter.

Or

(b) Explain Personal Protective Equipment (PPE) used for Safety against Electrical Hazards.

18. (a) Explain the Methods of Maintenance of Electrical Equipment.

Or

(b) Explain in detail about latest technology used to minimizing Electrical Hazards.

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C–7579	Sub. Code
	30715A/ 30615A

M.B.A./M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

First Semester

OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT

(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. List the properties of sound.
2. What is meant by industrial audiometry?
3. Define Chemical hazards.
4. How to control chemical hazards in the industry?
5. Write the classification of bio-hazardous agents.
6. List the Advantage of Conducting an employee health program.
7. What are all the activities of occupational health services?
8. Define Industrial toxicology.
9. What is meant by occupational work capacity?
10. Define Stress.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on (i) Noise (ii) Properties of sound.

Or

(b) Write short notes on (i) Noise networks (ii) Noise surveys.

12. (a) Explain about Industrial hygiene calculations.

Or

(b) Explain about recognition of chemical hazards.

13. (a) Discuss about the classification of bio-hazardous agents.

Or

(b) Write short notes on the Bio-hazard control program.

14. (a) Write short notes on the concept and spectrum of health.

Or

(b) Explain about pre-employment and post-employment medical examinations.

15. (a) Write short notes on Man as a system component.

Or

(b) Difference between aerobic and anaerobic work.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about OSHA standards.

Or

(b) Briefly discuss about physical hazards in the industry.

17. (a) Discuss in detail about Ergonomical hazards in the industry.

Or

(b) Briefly discuss about (i) Carpal Tunnel Syndrome (CTS) (ii) Tendon pain disorders of the neck.

18. (a) Explain about (i) Personal hygiene (ii) Categorization of job heaviness.

Or

(b) Discuss about occupational physiology in detail.

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C–7580	Sub. Code
	30615B/ 30715B

M.B.A./M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

First Semester

SAFETY IN MINING INDUSTRY

(Common for M.B.A (E&IS)/M.Sc.(I.S.H))

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Write some accident sources in mines.

2. What is garage safety?

3. Define occupational hazards.

4. List out some effects of fire explosion in the underground mine.

5. Why is lighting important in tunnelling?

6. What is trapping?

7. List out elements in risk assessment.

8. What are control charts?

9. What is a safety audit?

10. Define safety engineering.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Illustrate in detail about fire prevention, garage safety, and accidental reporting system in mines.

Or

(b) Discuss in detail about safe transportation in open cast mines.

12. (a) Explain in detail about occupation hazards in underground mining.

Or

(b) Discuss Winding and transportation in underground mining.

13. (a) Illustrate falls from platforms, danger from falling bodies in tunnelling.

Or

(b) Explain in detail about atmospheric pollution and electrical hazards while tunnelling.

14. (a) Describe fault tree analysis mode and failure mode analysis.

Or

(b) Discuss activity relationship analysis and fuzzy model for risk assessment.

15. (a) Explain in detail about accident frequency rates and investigation measures in mines.

Or

(b) Discuss on improving safety in mines and the cost of an accident along with emergency preparedness.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about causes and prevention of accidents from heavy machinery. belt and bucket conveyors, pneumatic tools, and electrical systems.

Or

(b) Illustrate in detail about gas detectors and warning sensors in underground mines.

17. (a) Explain in detail about ventilation, lighting, and PPE requirement in tunnelling?

Or

(b) Discuss in detail about elements in risk assessment.

18. (a) Classify the accident and explain each in detail.

Or

(b) Explain in detail about safety audit and recent development of safety engineering along with disaster management.

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C–7581	Sub. Code
	30615C/ 30715C

M.B.A./M.Sc. DEGREE EXAMINATION, NOVEMBER 2022

First Semester

SAFETY IN FIRE WORKS INDUSTRY

(Common for M.B.A., (E&IS)/M.Sc.(I.S.H))

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. List out the properties of Potassium Nitrate.

2. Write down the impact of fireworks.

3. What is the minor prevention done in the firework industry?

4. List out some hazards in firework industries.

5. What is fuse cutting?

6. List out some hand tools in process safety.

7. What is intermediate parking in material handling?

8. List out some handling methods for paper caps.

9. What are wastes associated with fireworks?

10. What are the restrictions associated with waste control?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on barium nitrate. and sulphur.

Or

(b) Explain in detail about borax and ammonia.

12. (a) Describe static charge meter and its process.

Or

(b) Illustrate in detail about earth pit maintenance.

13. (a) Illustrate the layout of the firework industry with a neat sketch.

Or

(b) Describe various stages of drying and packing of fireworks.

14. (a) Explain in detail about the design of vehicles for explosive transposition.

Or

(b) Illustrate in detail about material movement and storage facilities for firework products.

15. (a) Explain in detail about spillage and storage of residual in firework industries.

Or

(b) Illustrate waste handling methods in other countries.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Describe properties of fire and describe in detail about its explosion, impact, and sensitivity of friction.

Or

(b) Describe cause and effects in firework industries.

17. (a) Illustrate in detail about pollution prevention techniques and personal protective equipment used in firework industries.

Or

(b) Explain fire prevention and control along with risks related to the firework industry.

18. (a) Write down any case study associated with material handling in the firework industry.

Or

(b) Explain in detail about the concept of wastes in fireworks and their disposal with the necessary flow chart.

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C-2189	Sub. Code
	30721

M.B.A. DEGREE EXAMINATION, NOVEMBER 2022

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** questions.

1. What is meant by waste effluents?
2. Define spittoons?
3. Explain the term hours of work?
4. What is meant by muster roll?
5. Highlight importance of EPA act 1986?
6. What is meant by hazardous waste management?
7. What is bio-waste?
8. State air act?
9. What is noise?
10. What are static pressure vessel?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Illustrate powers of inspectors?

Or

(b) What are the powers need to taken in case of fire?

12. (a) Explain the notice reduction of work?

Or

(b) Describe the notices of occupational diseases and poisoning?

13. (a) List the importance of Air act.

Or

(b) Write short notes about the national government tribunal act 1995.

14. (a) Explain E-waste management and handling rules.

Or

(b) Illustrate hazardous waste management and handling technique?

15. (a) Explain Indian boilers act?

Or

(b) Explain in detail about noise rules?

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about the precaution needed to taken while handling hazardous processes.

Or

(b) Explain in detail about noise and occupational diseases.

17. (a) Illustrate the importance of Air act 1981?

Or

(b) Describe in detail about bio medical waste management?

18. (a) Elaborate in detail about noise rules.

Or

(b) Discuss in detail about E-waste management system?

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C–2190	Sub. Code 30722

M.B.A. DEGREE EXAMINATION, NOVEMBER 2022

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** questions.

1. What is meant by framework?

2. What are the sources of information required for health and safety?

3. What is supply chain?

4. How will you monitor health and safety policy?

5. Define safety culture?

6. What is risk assessment?

7. Define safe system of work?

8. Define reactive monitoring?

9. What is audit?

10. What is meant by convention?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on health and safety act at work.

Or

(b) Brief management of health and safety work regulation.

12. (a) Write the roles and responsibility of employer.

Or

(b) Explain health and safety regulation.

13. (a) Write short notes on human errors in safety performance.

Or

(b) Explain about in detail risk assessment process.

14. (a) Write short note on permit to work.

Or

(b) How to measure performance in detail.

15. (a) Explain function of ILO convention and recommendation.

Or

(b) List benefits of occupational health and safety management system.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Write in detail about key elements of health and safety policy.

Or

(b) Exp1ain in detail roles and function of safety practitioners.

17. (a) Explain in detail about selection procedure for an contractor.

Or

(b) Explain proactive and reactive monitoring with suitable example?

18. (a) Write about internal and external influences of training.

Or

(b) Discuss in details about the key characteristics of a health and safety management systems.

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C–2191	Sub. Code 30723

M.B.A. DEGREE EXAMINATION, NOVEMBER 2022

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** questions.

1. What is material handling and its types?

2. Define ergonomics?

3. What are the reason for crane accident?

4. What is overloading in crane?

5. What is derricks and types

6. List the types of conveyors?

7. Difference between rigging and rigger

8. What is sling and its types?

9. What is electric truck?

10. What are principles of powered industrial truck?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What are the accessories used for manual material handling.

Or

(b) Explain the storage and handling of cryogenic liquids

12. (a) Explain about the inspection in maintenance of crane.

Or

(b) Write a safety precaution for crane operation?

13. (a) Explain about counter weight system of crane?

Or

(b) Write down the procedure to operate the derricks near powered lines

14. (a) Explain about rigging and types of riggers.

Or

(b) What are the types of slings used to rigging process?

15. (a) How to evaluate the training performance test for powered trucks operators.

Or

(b) Write down the safety devices and brakes in escalators?

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) What are the safety precaution need to taken for manual handling technique?

Or

(b) Write in detail about

(i) Lifting plan

(ii) Third party inspection for safe load indicators of crane

17. (a) Write downs the conveyor safety and conveyor regulations.

Or

(b) Explain safety precaution for highway trucks and off road vehicles.

18. (a) Write about the selection and maintenance of wire rope sling.

Or

(b) Discuss in detail about the power elevators and its safety precautions.

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C–2192	Sub. Code 30724

M.B.A. DEGREE EXAMINATION, NOVEMBER 2022

Second Semester

Environment and Industrial Safety

ENVIRONMENTAL STUDIES

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

Define the following:

1. Natural resources
2. Mining
3. Over grazing
4. Land slides
5. Food Web
6. Species diversity
7. In - situ
8. Carbon monoxide
9. Coral depletion
10. Nuclear hazards

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Why we need to give more importance to environmental studies? explain

Or

(b) How do you make public awareness on environment? Explain

12. (a) Give a note on over exploitation of forest resources.

Or

(b) Write about conflicts over water.

13. (a) Explain the world food problems due to modern agriculture.

Or

(b) Write a note on functions of ecosystem.

14. (a) Write the Bio geographical classification of India.

Or

(b) Explain the causes of soil pollution.

15. (a) How do you prevent and control marine pollution? Explain.

Or

(b) Give an account on your local visit to an industry.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Describe about the timber extraction and mining and their effect on tribal people.

Or

(b) Explain the alternative sources for growing energy needs.

17. (a) Discuss on Values of Biodiversity.

Or

(b) Give an detailed account on threats to biodiversity.

18. (a) Discuss on causes and effects of water pollution.

Or

(b) Make a detailed note about a simple ecosystem from your local visit.

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C–6326

Sub. Code
30725 a/ 30625 a

M.B.A./M.Sc. DEGREE EXAMINATION, APRIL 2022

Second Semester

Environment and Industrial Safety

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. Explain Occupational Stressor.

2. How are human errors classified?

3. Define HAZOP.

4. Define Job Safety Analysis.

5. What is Markov method?

6. Explain bathtub hazard curve.

7. Define Preliminary Hazard Analysis.

8. Write the organizational factors affecting safety.

9. Name any four accident causation theories.

10. How offshore oil and gas industry are different from onshore installations?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write brief note on safety management principles.

Or

(b) Explain FMEA with an example.

12. (a) Explain steps involved in Oil Field Fatality Analysis.

Or

(b) Explain Fault Tree Analysis with an example.

13. (a) Write the common causes of accidents in offshore industry?

Or

(b) List oil and gas industry accident databases and accident data collection sources.

14. (a) Write a note on lessons learnt in recent offshore oil and gas accidents.

Or

(b) Discuss Mumbai High North Platform accident and its causes.

15. (a) Discuss Bohai 2 oil accident and its causes.

Or

(b) Discuss Seacrest Drill Ship accident and how it could have been prevented.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Write an essay on Prevention of accidents in Oil and Gas industry.

Or

(b) Compare safety challenges in Onshore and Offshore Oil and Gas installations.

17. (a) Write in detail about any two offshore oil and gas industry accident databases.

Or

(b) Write note on Emergency Planning and Preparedness for offshore platforms.

18. (a) Discuss any two accident causation theories.

Or

(b) Write an essay on Safety Awareness Training for Offshore O and G Industry employees.

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C–2195

Sub. Code
30725 C

M.B.A. DEGREE EXAMINATION, NOVEMBER 2022

Second Semester

Environment 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 the term ALARP.
2. What is meant by hazard?
3. List out the PHA methods.
4. State Risk with example.
5. Write the short notes on FTA.
6. What is HRA?
7. What is meant by HAZOP?
8. Define FMEA.
9. List out the classification based on electrical area.
10. Define erection.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What is risk? How to calculate it by using the risk matrix?

Or

(b) Write short notes on PHA.

12. (a) List in detail about the methods of PHA.

Or

(b) How to compute the risk by using HIRA?

13. (a) Write short note on Layer of Protection Analysis.

Or

(b) Write a short note on FTA.

14. (a) What are the concepts of automated FMEA?

Or

(b) Explain in detail about computer HAZOP.

15. (a) Write in detail about safety life cycle.

Or

(b) Explain in detail about explosion protection.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain in detail about Hazard and risk

Or

(b) Explain in detail about ALARP.

17. (a) Explain in detail about HRA.

Or

(b) What is meant by PHA? Compare the various method of PHA methods.

18. (a) Explain in detail about FMEA. And methodology of FEMA?

Or

(b) What are the operation and maintenance of safety life cycle?

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C–7582	Sub. Code
	30731

M.B.A. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

Environment and Industrial Safety

CONSTRUCTION SAFETY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define site layout.

2. What is meant by occupational health and hygiene?

3. Define (a) Excavation (b) Drilling

4. Define blasting.

5. How to control Traffic management during road construction?

6. How to control hazard control in the road making?

7. Define Scaffolding.

8. Define fire brick.

9. Define static loads.

10. List the portable electrical tools.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write short notes on (i) Housekeeping (ii) Maintenance in construction safety.

Or

(b) Write short notes on (i) Sanitary facilities (ii) Washing facilities.

12. (a) Write short notes on (i) Transportation of explosives (ii) Handling of explosives.

Or

(b) Write short notes on (i) Drilling and Blasting (ii) Precautions for firing.

13. (a) Write short notes on (i) Maintenance in mobile cranes (ii) Maintenance in tower cranes.

Or

(b) Discuss about causes of accidents in the material movements.

14. (a) Write notes on (i) Structural steelworks (ii) Scaffolding.

Or

(b) Discuss about Electrical cables of wires used in the Construction industry.

15. (a) Write short notes on (i) Selection of Tools (ii) Uses of tools.

Or

(b) Write short notes on (i) Electrical equipment (ii) Grinding and Gas cutting.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Explain about Indian Explosives Act and Guidelines for storage of explosives.

Or

(b) Explain (i) Piling and Deep foundations (ii) General Precautions in Tunneling

17. (a) Explain in detail about Mixing of Concrete materials and Safe practices.

Or

(b) Explain about ladders, safe use of ladders, care of ladders in detail.

18. (a) Define Hot work. Explain about welding and its process, types, advantages and disadvantages.

Or

(b) Explain (i) Liquified Petroleum Gas (LPG) — Storage and handling (ii) General safety measures during Tunneling work.

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C–7583	Sub. Code
	30732

M.B.A. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

Environment and Industrial Safety

INDUSTRIAL SAFETY AND PROCESS SAFETY MANAGEMENT

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions.

1. What is mean by industrial safety?

2. What is mean by guarding of machines?

3. Define safety management.

4. Write the difference between accident and injury

5. Write the factors to be considered in process design.

6. Write any two standards and codes in the pipework

7. Define plant operation.

8. What is the use of color-coding of pipes and cylinders?

9. What is mean by plant commissioning?

10. Write any two methods of non-destructive testing.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Explain safety training procedures in the industry.

Or

(b) Write short notes on general safety rules followed in the industry.

12. (a) Explain preventions of an accident involving hazardous substances.

Or

(b) Discuss in detail about confined space hazards industries.

13. (a) Explain about pressure systems in the industry.

Or

(b) Explain standards and codes in heat exchanger process machinery.

14. (a) Explain about commissioning problems in the industry.

Or

(b) Write short notes on the plant monitoring system in detail.

15. (a) Write short notes on inspection procedures in plant operation.

Or

(b) Discuss in detail about operating discipline in the plant operation.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Discuss the role and duty of safety professionals in the industry.

Or

(b) Explain in detail about occupational health and industrial hygiene.

17. (a) Briefly discuss plant operating procedure and plant inspection.

Or

(b) Explain in detail about start up and shutdown operation in plants.

18. (a) Discuss the principles of sale machine design.

Or

(b) Explain about the precaution to be taken in the maintenance work.

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C–7584	Sub. Code
	30733

M.B.A. DEGREE EXAMINATION, NOVEMBER 2022

Third Semester

Environment and Industrial Safety

SAFETY CULTURE AND BEHAVIOUR BASED SAFETY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Why is it essential to strengthen the safety culture?

2. Mention some promotional strategies for safety culture.

3. List some steps involved in safety training.

4. Define OSHA fines.

5. Define feedback in BBS.

6. What is the readiness of behaviour?

7. List out some methods to promote safety culture.

8. How to motivate safety culture?

9. List out the significance of safety education.

10. What is a safety training method?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) How to locate the source of the problem? briefly discuss it.

Or

(b) Explain in detail about the identification of safety culture on the decline.

12. (a) Explain in detail about the behaviour safety program.

Or

(b) Write short notes on investigation and reporting workplace injury.

13. (a) Illustrate organization safety culture and measurement.

Or

(b) Discuss established integrated safety management system.

14. (a) Illustrate methods to eliminate recognized occupational hazards.

Or

(b) Write short notes on BBS programs to the specific workplaces.

15. (a) Explain in detail about the role of government agencies in safety training.

Or

(b) Discuss domestic safety and training.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) How to promote the right attitude among workers? Discuss the techniques to empowering them.

Or

(b) Discuss management commitment and their promotional strategies for empowerment.

17. (a) Illustrate in detail about key performance indicators and upper management responsibilities towards employees.

Or

(b) Illustrate in detail three-phase in behaviour based safety in the workplace.

18. (a) Discuss behaviour, implement and maintaining process of safety process.

Or

(b) Discuss safety motivation and importance of awareness.

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C–7585	Sub. Code
	30734

M.B.A. DEGREE EXAMINATION, NOVEMBER 2022.

Third Semester

Environment and Industrial Safety

COMPUTER AIDED HAZARD ANALYSIS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** the questions.

1. Classify the risk issues.

2. Define a safety warning system.

3. Define Computer-Aided Instrument.

4. What is a reactive calorimeter?

5. What is event tree analysis?

6. Define HAZAN.

7. What is gas dispersion?

8. Define confined explosion.

9. Why is it essential to record and analyze the significant chemical tragedies?

10. Mention any three major chemical disasters.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Illustrate in detail about approaches for establishing risk acceptance levels.

Or

(b) Discuss hazard operability studies.

12. (a) Illustrate DSC in detail with a neat sketch.

Or

(b) Explain shock sensitiveness test with its working principle and process with neat sketch.

13. (a) Briefly discuss the tree analysis and their types in detail.

Or

(b) Write short notes on basic concept of reliability.

14. (a) Discuss in detail about Explosion, UVCE, and flash fire.

Or

(b) Discuss the logic of consequence analysis in detail.

15. (a) Discuss any one of the major chemical disasters.

Or

(b) Explain in detail about non-nuclear installation hazard assessment.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain in detail about risk estimation and hazard assessment with its methodology.

Or

(b) Discuss checklist analysis, preliminary analysis. human error analysis, and safety warning system.

17. (a) Discuss explosive and deflagration testing detail with neat sketches.

Or

(b) Illustrate in detail about modules on heat radiation, pool fire, and electrical system.

18. (a) Explain in detail about explosion with its types.

Or

(b) Discuss reactor safety study in nuclear plants.

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C–7586	Sub. Code 30735

M.B.A. DEGREE EXAMINATION, NOVEMBER 2022.

Third Semester

Environment and Industrial Safety

EVOLUTION OF MODERN SAFETY CONCEPTS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. Define safety sampling.
2. What is disaster control?
3. List out some management theories.
4. What is a permissive democrat?
5. Define FMEA.
6. Define HIRA.
7. Define human factors theory.
8. What is gross hazard analysis?
9. Define Pareto analysis.
10. What is the Weibull model?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Write short notes on Incident recall technique.

Or

(b) Illustrate in detail about budgeting for safety.

12. (a) Discuss McGregor's theory.

Or

(b) Explain in detail about contingency theory.

13. (a) Discuss the reliability of critical systems and devices.

Or

(b) Explain in detail about risk assessment methods.

14. (a) Illustrate in detail about the epidemiological theory.

Or

(b) Discuss energy release theory and behaviour theory.

15. (a) Describe failure data analysis and mean failure rate.

Or

(b) Explain in detail about maintainability 114 and availability.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss in detail about safety inspection and job safety analysis.

Or

(b) Explain in detail about safety-line staff function for safety budgeting for safety-safety policy.

17. (a) Define the Deming cycle and explain in detail.

Or

(b) Discuss in detail about hazard assessment, risk control and quantitative risk analysis.

18. (a) Explain in detail about multilinker event sequencing method and investigation reports.

Or

(b) Explain product design, analysis, development and life cycles of a product.

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C–6334	Sub. Code
	30741

M.B.A. DEGREE EXAMINATION, APRIL 2022

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 the purpose of workplace inspection?
2. Describe the frequency of inspection in short.
3. Mention types of Audit.
4. What are post-audit activities?
5. Define ISO 14001
6. List out types of EIA.
7. What are the responsibilities of IS 14489:1998?
8. Define audit goals of IS 14489:1998.
9. Mention some benefits of OSHAS 18001 certification.
10. Define a short-term action plan.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Illustrate in detail about follow-up and monitoring in the inspection.

Or

(b) Describe the purpose of the inspection team.

12. (a) Explain in detail about on-site activities.

Or

(b) Discuss assessment strengths and weaknesses during Audit.

13. (a) Discuss the principle of LCA with its stages.

Or

(b) Explain in detail about ISO 14020.

14. (a) Discuss the process of executing and collecting evidence in IS 14489:1998 Audit?

Or

(b) Write short notes on report distribution and record retentions in IS 14489:1998 Audit?

15. (a) Discuss benefits of certification of OSHAS 18001 and its procedure.

Or

(b) Discuss guidelines for implementing (18002:2000) OSHAS 18001.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Briefly discuss about duration and frequency of inspection.

Or

(b) Explain in detail about the methodology to conduct a safety audit and discuss pre-audit activities.

17. (a) Discuss ISO 14004 with principle, documentation requirement, and clauses 4.1 to 4.5.

Or

(b) Illustrate in detail about ISO 14000 with its implantation plan, registration, and importance to management auditing.

18. (a) Discuss three types of the annex in IS 14489:1998 Audit.

Or

(b) Explain the content of OH and S policy in detail with its principle, strategy, planning, and specific goals.

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C–5241	Sub. Code
	30742

M.B.A. DEGREE EXAMINATION, NOVEMBER 2022

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. What is the purpose of GHS label?

2. How TREM Cards are useful?

3. What is flammability of chemicals?

4. What is compatibility of chemicals?

5. What is the purpose of manifest system?

6. What is municipal solid waste?

7. What are the sources of fly ash?

8. What is the unit of measurement for radiation?

9. What are the sources of radiation?

10. Define the term “stabilization”.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the term "air stripping"

Or

(b) Explain the term "Chemical Oxidation"

12. (a) How ground water get contaminated by hazardous wastes?

Or

(b) Explain process of bio-degradation process with examples.

13. (a) Explain "in-situ remediation".

Or

(b) Explain the reactions happening inside slurry phase bio-reactor

14. (a) List Environmental Risk assessment methods.

Or

(b) Explain incineration of hazardous wastes.

15. (a) List hazardous waste characteristics.

Or

(b) Explain basic design of secured landfill.

Part C (3 × 10 = 30)

Answer **all** questions, by choosing either (a) or (b).

16. (a) Write important provisions of Batteries (Management and Handling) Rules.

Or

(b) Write important provisions of Manufacture, Storage and Import of Hazardous Chemicals Rules.

17. (a) Write important provisions of Bio-medical Wastes (Management and Handling) Rules.

Or

(b) Write important provisions of Municipal Solid Wastes (Management and Handling) Rules.

18. (a) Write a note on manifest system explaining the various steps involved.

Or

(b) Write a note on design considerations for a secured landfill.

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C–5242	Sub. Code
	30743

M.B.A. DEGREE EXAMINATION, NOVEMBER 2022

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. What is Limited Approach?

2. What is Restricted Approach?

3. Define permissible hot spot temperature.

4. Define Incident Energy.

5. How nitrogen filled equipment/enclosures are safe?

6. Define Temperature Classification of hot surfaces.

7. What is the purpose of surge protection device.

8. What are Zone 20,21 and 22?

9. Define emission degrees of hazardous substances sources.

10. What are safety hazards of electrical faults?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write short note on increased safety equipment.

Or

(b) Write the procedure for hazardous area classification.

12. (a) Write note on design regulations for explosion proof equipment.

Or

(b) Write short note on Intrinsically safe equipment.

13. (a) Write brief note an passive barriers in hazardous locations.

Or

(b) Write brief note on sources of static electricity and its protection.

14. (a) Write brief note on expert systems for safety assurance.

Or

(b) Write brief note on Online Monitoring Expert Systems.

15. (a) Write note on use of Sulphur HexaFluoride (SF6) as insulation medium.

Or

(b) Write briefly on NEC Hazardous Area Classification.

Part C (3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write an essay on various protection methods in hazardous areas.

Or

(b) Write an essay on various types of equipment/enclosures used in hazardous areas.

17. (a) Write a note on Intrinsic safety in hazardous locations and Class I, II, III types.

Or

(b) Write a note on types of protection suits used to work near electrical equipment.

18. (a) Differentiate Explosion proof, Flameproof and Intrinsically Safe electrical equipment.

Or

(b) Write a note on NFPA, IEC and NEC Safety Codes and their applicability.

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C–5243	Sub. Code
	30744

M.B.A. DEGREE EXAMINATION, NOVEMBER 2022

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** questions.

1. Differentiate product and process layout.
2. Explain Just-In- Time concept.
3. Explain 5S concept.
4. Write two common causes for deterioration of material handling equipment.
5. How CRAFT- Computerized relative allocation of facilities technique is useful?
6. What are the methods of attachments of slings?
7. What are the territorial parameters applied in site selection?
8. Define Ergonomics.
9. What are the safety considerations for hazardous chemical storage?
10. Why weather conditions should be considered in site selection?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Briefly explain the role of logistics in plant layout design.

Or

(b) Describe product layout.

12. (a) Write brief note on material flow analysis.

Or

(b) Write brief note on industrial ventilation.

13. (a) Write brief note on lighting requirements for various work.

Or

(b) Write a note on role of preventive maintenance in safety and health.

14. (a) Explain the type of layout suitable for pharmaceutical industry.

Or

(b) Write a brief note on Fire Protection Systems.

15. (a) Discuss the design considerations for food processing industry layout.

Or

(b) Write a brief note on Standards and Codes applicable for plant layout development.

Part C (3 × 10 = 30)

Answer **all** questions, choosing either (a) or (b).

16. (a) Write an essay on Layout Design of Industrial Complex for Chemical industries.

Or

(b) Compare various Computerized layout and analytical methods.

17. (a) Elaborate various non-destructive testing methods.

Or

(b) Explain testing and examination of lifting tools and appliances in detail.

18. (a) Write an essay on general safety consideration in material handling.

Or

(b) Write an essay on how good layouts contribute to health and safety of workers.

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C–6338	Sub. Code
	30745

M.B.A. DEGREE EXAMINATION, APRIL 2022

Fourth Semester

Environment and Industrial Safety

INDUSTRIAL HYGIENE AND TOXICOLOGY

(2019 onwards)

Duration : 3 Hours **Maximum : 75 Marks**

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is Industrial hygiene?

2. Define moving force.

3. List out types of ionization radiation.

4. Write short notes on zoonoses.

5. Classify the toxic materials.

6. What is HAZCHEM?

7. What is man-machine system?

8. Define WRULD.

9. Discuss the purpose of air sampling.

10. Define X-Ray.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss the control system in the human body.

Or

(b) Explain in detail about sense organs in the human body.

12. (a) What is hepatitis and its types? Detail its cause and effect.

Or

(b) Explain in detail ventilation systems in the industrial workplace.

13. (a) Discuss routes of entry and absorption of dose.

Or

(b) Explain in detail about blood damaging agents.

14. (a) Write short notes on workplace risk assessment.

Or

(b) Explain in detail about the design of the job and workplace.

15. (a) Discuss the methods for sampling gases and vapours.

Or

(b) Explain in detail about BEI.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Illustrate in detail about the digestive system in the human body.

Or

(b) Describe the following terms in detail (i) HIV (ii) Anthrax.

17. (a) Classify the toxic materials and explain each type in detail.

Or

(b) Discuss in detail about metabolism, excretion, and response to toxins.

18. (a) Briefly discuss the factors affecting the performance of physical tasks.

Or

(b) Explain in detail about neurological tests.

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C–6339	Sub. Code
	30746

M.B.A. DEGREE EXAMINATION, APRIL 2022

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** questions.

1. List the responsibilities of port authorities,

2. What is the purpose of a forum in safety legislation?

3. Mention types of the cargo ship.

4. Define safety means of access.

5. What are lifting appliances?

6. List out various types of ropes used for lifting.

7. Define conveyors.

8. What are dangerous goods?

9. What is cargo handling?

10. Mention some emergency action to be performed after gas leakage on the shipyard.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss the history of dock safety status in India.

Or

(b) Explain in detail about the owner of the shipmaster and agent of the ship.

12. (a) Discuss in detail about the handling of hatch beam and hatch covers.

Or

(b) Illustrate in detail about safety in chipping and painting operation onboard ships.

13. (a) Discuss in detail about different types of lifting appliances.

Or

(b) Explain in detail about testing and examination of lifting appliances.

14. (a) Discuss restriction of loading and unloading operations.

Or

(b) Illustrate in detail about safety operation handling of different types of cargo.

15. (a) Discuss emergency action plan for fire and explosion in ship dock.

Or

(b) Illustrate in detail about the preparation of the on-site emergency plan.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss in detail about dock workers act 1986 with rules and regulations.

Or

(b) What are the port authority and dock welfare board? Explain their responsibilities.

17. (a) Illustrate in detail about electricity and electrical management in the onboard ship with storage types.

Or

(b) Explain about safety procedures to be followed in lifting appliances and maintenance of various ropes used in lifting.

18. (a) Discuss in detail about testing. examination, and inspection of dangerous goods in containers.

Or

(b) Explain in detail about the emergency action plan for gas leakage and collapse of lifting appliances in the ship dock.

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