C–1993	Sub. Code
	30621

M.Sc. DEGREE EXAMINATION, APRIL 2024

Second Semester

Industrial Safety and Hygiene

BEHAVIOR BASED SAFETY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Safety and Attitude.
2. Define Emotion with example.
3. What is the importance of motivation?
4. Define Attitude and personality.
5. What is ABC analysis of Behavior?
6. Mention the learning theories.
7. What is human behavior act is based upon?
8. What is the factors associated with consequences?
9. Mentions the don'ts at brainstorming session.
10. Mention any 2 myths of BBS.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain in brief on learning theories.

Or

(b) Write a short notes on Organization behavior modifications.

12. (a) Write a short notes on modification and its effects on work behavior.

Or

(b) Write a short notes on importance of Group Dynamics.

13. (a) Write a short notes on Integration of BBS principles into other management system.

Or

(b) Explain ABC behavior model consequences.

14. (a) Write a short notes on importance of health promotion training.

Or

(b) Write a short notes on "Todays concept of Training and Education".

15. (a) Write a short notes on "Sustaining Continuous Involvement in Occupation Safety".

Or

(b) List out the barriers to breakthrough performance. Explain.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Write briefly on individual behavior.

Or

(b) Write a short notes on Group behavior.

17. (a) Write in detail on lessons from BBS for increasing PPE use.

Or

(b) Write briefly on Brainstorming.

18. (a) What are the 10 leadership qualities for total safety culture? Explain.

Or

(b) What are the 10 myths BBS? Explain.

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C–1994	Sub. Code
	30622

M.Sc. DEGREE EXAMINATION, APRIL 2024

Second Semester

Industrial Safety and Hygiene

LEGISLATIONS : ENVIRONMENT, HEALTH AND SAFETY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Who is an "Adult" and an "Adolescent'?

2. State the meaning of hazardous process.

3. List out the various statues enacted in India for Environment Protection.

4. Whoever contravenes any of the provisions of the Air Act is penalized. What is the penalty?

5. Write the list of hazardous and toxic chemicals used in manufacturing firms.

6. What is meant by "isolated storage" as per Manufacture, Storage and Import of Chemical Rules 1989?

7. What are the duties of an occupier and operator of a facility?

8. As per the Workmen's Compensation Act, what is the amount of compensation for various injuries of a workman?

9. What are the due process requirements for American National Standards?

10. Explain the meaning of 'OSHAS 18000 Standards.

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

Answer **all** questions.

11. (a) Describe the important concepts and definitions of the 'Factories Ad. 1948'.

Or

(b) What are the provisions relating to hazardous processes? Explain in detail.

12. (a) Explain the terms involved in the 'Environmental Protection Act, 1986.

Or

(b) Discuss the general powers of central government under EPA.

13. (a) State the importance of Safety Reports of Manufacture, Storage and import of Chemical Rules 1989.

Or

(b) Elaborate on the hours of work, welfare measures and other conditions of service of building workers as per 'The Building and Other Construction Workers Act 1996'

14. (a) Write short notes on safe handling of gas cylinder as per gas cylinder rules explosives act 1983.

Or

(b) Write short notes on salient features of pesticides act.

15. (a) Write notes on air pollution control devices and its benefits.

Or

(b) Write salient features of electricity act and rules.

Part C $(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain the salient features of static and mobile pressure vessel rules.

Or

(b) Explain the functions of Central and State Boards with respect to the Water Pollution. Also state the importance of Section 24 of Water Act, 1974.

17. (a) Give an account on the details to be furnished in the case of On - site emergency plan as well as Off-site emergency plan.

Or

(b) Describe the health and safety regulations and approved codes of practice as prescribed in the Health and Safety Work Act 1974, UK.

18. (a) Discuss the provisions of the registration process of boiler and renewal of certificate described by the 'Indian Boilers Act, 1923'.

Or

(b) Explain the terms and conditions involved in the OSHAS 18000- ISO 14000.

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C–1995	Sub. Code
	30623

M.Sc. DEGREE EXAMINATION, APRIL 2024

Second Semester

Industrial Safety and Hygiene

ELECTRICAL SAFETY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define competent person and authorized person.

2. What is safe handling voltage? Give its value.

3. What are the factors on which severity of electric shock depends upon?

4. List out primary and secondary hazards.

5. What is the function of a relay?

6. Differentiate the system grounding and equipment grounding.

7. Write the significance of fail-safe concept.

8. What is a discharge rod?

9. What are barriers and isolators? List its functions.

10. What are the equipment certifying agencies in India? List its functions.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) What type of protection is to be given for transformers as per Indian Electricity Act?

Or

(b) Explain the energy radiation and electromagnetic interference.

12. (a) Discuss the guidelines given by Indian Electricity Act about reporting of electrical accidents?

Or

(b) What is meant by stored energy? Why is it hazardous?

13. (a) What is corona effect? Explain the problems caused due to it.

Or

(b) Explain the causes of electrical fire and explosion.

14. (a) Explain the construction and working of a lightning arrestor.

Or

(b) What are the safety measures to be followed in the use of portable tools?

15. (a) What is temperature classification? Explain its categories.

Or

(b) Explain lock out and work permit system.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) With a neat sketch explain earth pit and also explain the need for earthing.

Or

(b) Explain the different types of circuit breakers and its working principles.

17. (a) What is a hazardous zone? How are they classified? How are electrical equipment's selected for different zones?

Or

(b) With a neat sketch, explain intrinsically safe electrical apparatus.

18. (a) What are the precautions to be taken during laying underground cable? What are the different kinds of cable joints?

Or

(b) Explain the protection given to electrical equipment's against over voltage and under voltage.

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C–1996	Sub. Code
	30624

M.Sc. DEGREE EXAMINATION, APRIL 2024

Second Semester

Industrial Safety and Hygiene

INDUSTRIAL HYGIENE — II : EVALUATION AND CONTROL OF HAZARDS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is PPE?
2. Define safety inspection.
3. What do you mean by heat hazard?
4. How will you prevent pedestrian hazard?
5. What is non-mechanical machinery hazard?
6. What are effects of manual handling of hazards?
7. List any two electrical hazards.
8. Explain the term- “suitability of an equipment”.
9. Explain risk assessment.
10. Give the expansion of HAZOP and ETA.

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

Answer **all** questions.

11. (a) Explain SAFETY AUDIT.

Or

(b) Write notes on "what-if" analysis.

12. (a) List the control strategies for mobile plant operation.

Or

(b) Explain the cause and prevention of work place violence.

13. (a) List various types of mechanical handling and moving equipment.

Or

(b) Compare maintenance and inspection.

14. (a) Explain the term- "health surveillance".

Or

(b) List the requirements of COSHH.

15. (a) Write notes on HAZOP.

Or

(b) Discuss about safety management tools.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss in detail about SAFETY SURVEY with a format.

Or

(b) Discuss in detail about hazard assessment procedure and methodology.

17. (a) With a case study of your own explain heat and radiation hazard.

Or

(b) Discuss in detail about FMEA.

18. (a) What are biological agents? Explain its mode of entry to human bodies and its effects.

Or

(b) Design an SOP for a risk of your choice.

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C–1997	Sub. Code
	30625B

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Second Semester

Industrial Safety and Hygiene

HAZARD AND RISK ANALYSIS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define the term frequency rate.
2. Explain the term severity rate.
3. Define the term Prevention.
4. Define the term Protection.
5. What is ETA and FMEA?
6. Explain SOP.
7. Define accident and incident.
8. Explain reportable accidents.
9. What is total disability?
10. Define safety T score.

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

Answer **all** questions.

11. (a) Explain the type of industrial hazards.

Or

(b) Explain how hazards can be eliminated.

12. (a) Explain JSA with a suitable format.

Or

(b) Who all are responsible for preparation JSA and when it is reviewed?

13. (a) Explain Hazard analysis with example.

Or

(b) Explain HAZOP with steps involved in preparation.

14. (a) Explain the shell model with a line diagram.

Or

(b) Explain the basic steps involved in root cause analysis.

15. (a) Explain the term frequency rate and severity rate.

Or

(b) Explain accident rate and incident rate.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Explain risk assessment and differentiate qualitative and quantitative risk assessment used in industry.

Or

(b) Explain the procedures involved in preparation of JSA and how it is approved and when renewed.

17. (a) What is fault tree analysis, explain with a simple line diagram?

Or

(b) What is Heinrich triangle, how it has been prepared and advantages of the triangle?

18. (a) Explain safety activity rate and how it can be improved in an organization.

Or

(b) List the hierarchy of control measures and why PPE is the last option in the order.

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C–1998	Sub. Code
	30626

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Second Semester

Industrial Safety and Hygiene

INTERNATIONAL HEALTH AND SAFETY STANDARDS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

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

Answer **all** questions.

1. What is the objective of ISO14001?
2. Define environmental policy in ISO 14001
3. What are the measurement techniques nvolved in ISO 45001?
4. List out the benefits of ISO 45001
5. Write the objectives of Health and safety at work act 1974.
6. List out the stages of ISO 14000.
7. Why is ILO important?
8. What is ANSI?
9. List out the stages of LCA.
10. Define ISO 9001.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss about the environmental audit plan.

Or

(b) Discuss about the objectives and Targets of ISO 14001.

12. (a) Discuss the measurement techniques involved in ISO 45001.

Or

(b) Discuss about the methodology steps in developing action plan of ISO 45001.

13. (a) What information must employers provide to employees and representatives?

Or

(b) Write short notes on 'General duties of employees' at work as per Health and Safety at Work Act 1974.

14. (a) What are the fundamental principles of ILO?

Or

(b) What is the role of ANSI?

15. (a) Describe about the ISO 50001.

Or

(b) Write the benefits of IMS.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Describe about the ISO 14001 general principles of audit and steps are involved in the audit.

Or

(b) Explain the general principles and development of action plan of ISO 45001.

17. (a) Write short notes on Health and Safety Work Act 1974.

Or

(b) Discuss about the scope, elements and specification of OH and S management system.

18. (a) Explain in detail general principles of LCA, stages of LCA and Reports and Review involved in ISO 14040.

Or

(b) Explain in detail about IMS certification Process.

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C–1999	Sub. Code
	30631

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Third Semester

Industrial Safety and Hygiene

CONSTRUCTION SAFETY ANALYSIS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Name the eye and ear protection equipment.
2. What is the Risk to Health at Work?
3. Define shoring.
4. Write short notes on the Indian Explosives Act, 1984.
5. How to maintain the traffic during road repair?
6. What is MEWP?
7. List the uses of step ladders.
8. How do you handle crusher stones in construction?
9. Express the applications of compressed air tools.
10. Define welding.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Briefly discuss about housekeeping.

Or

(b) Explain briefly the hand and skin protection methods in the construction site.

12. (a) Describe the guidelines for the storage of explosives.

Or

(b) Explore the need and importance of tunneling machines.

13. (a) Briefly discuss about Road maintenance.

Or

(b) Express the uses of lifting tools and ropes in material movement.

14. (a) Briefly discuss the handling of glass sheets and plates.

Or

(b) Erection and training — explain with necessary information.

15. (a) Explore standing and sifting positions in construction.

Or

(b) Explain briefly about Grinding.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Discuss the need and significance of sanitary and washing facilities.

Or

(b) Explain the most important common hazards with necessary data.

17. (a) Briefly discuss about machine faults in site transport.

Or

(b) Identify the use of ladders and explore the care of ladders with relevant information.

18. (a) How to handle and store the liquified petroleum gas and briefly discuss it.

Or

(b) What is electric shock, and explore the treatment for electric shock.

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C–2000	Sub. Code
	30632

M.Sc. DEGREE EXAMINATION, APRIL 2024

Third Semester

Industrial Safety and Hygiene

INDUSTRIAL SAFETY ENGINEERING

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List the selection parameters of plant location.
2. Define safety system.
3. Differentiate drilling and boring.
4. What is called ZMS?
5. Define Maintenance.
6. Write short notes on color-coding.
7. Write about electroplating.
8. Define the term dynamic balancing.
9. Define OSHA standards.
10. List a few benefits of OSHA certification.

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

Answer **all** questions.

11. (a) Describe the safe storage of chemicals.

Or

(b) Sketch a safe layout for the engineering industry.

12. (a) Write short notes on machine guarding.

Or

(b) Discuss the benefits of good guarding systems.

13. (a) Write short notes on hazardous installations.

Or

(b) Explain the leak detection system in detail.

14. (a) Discuss the importance of administrative control.

Or

(b) Write short notes on radiography safety.

15. (a) Write about the general principle of Oh&s.

Or

(b) Mention the objectives of the short-term action plan.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss the facilities required for safe effluent disposal.

Or

(b) Sketch and Explain the safe layout of food processing industries.

17. (a) Describe the guarding of hazardous with suitable sketches.

Or

(b) Discuss the PPE used in hot works with sketches.

18. (a) Describe the various types of safety inspection methods in detail.

Or

(b) Explain the content of Oh&s policy in detail.

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C–2001	Sub. Code
	30633

M.Sc. DEGREE EXAMINATION, APRIL 2024

Third Semester

Industrial Safety and Hygiene

EVOLUTION OF MODERN SAFETY CONCEPTS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define quality.
2. Write the importance of job safety analysis.
3. Define the Deming cycle.
4. Mention the objectives of system theory.
5. Define Risk management.
6. Write short notes on HIRA.
7. State human factor theory
8. Define the term seven avenues.
9. Mention the importance of reliability.
10. Define product life cycles.

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

Answer **all** questions.

11. (a) Discuss the line and staff functions for safety.

Or

(b) Write short notes on IRT.

12. (a) Write the objectives of contingency theory.

Or

(b) Discuss the various management styles.

13. (a) Write short notes on FMEA.

Or

(b) Discuss the quantitative risk analysis.

14. (a) Explain the modern causation model.

Or

(b) Write short notes on Accident investigation techniques.

15. (a) Write the significance of maintainability.

Or

(b) Discuss the Weibull model.

Part C

$(3 \times 10 = 30)$

Answer **all** questions.

16. (a) Elaborate the general concepts of management in detail.

Or

(b) Enumerate McGregor's X and Y theories with suitable examples.

17. (a) Describe hazard identification and analysis in detail.

Or

(b) Discuss Heinrich's axioms of industrial safety in detail.

18. (a) Enumerate reliability improvement technique in detail.

Or

(b) Describe the evolution of the performance of supervisors on safety.

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C–2002	Sub. Code
	30634

M.Sc. DEGREE EXAMINATION, APRIL 2024

Third Semester

Industrial Safety and Hygiene

COMPUTER AIDED HAZARD ANALYSIS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Mention the procedure for risk estimation.
2. Define safety review.
3. Write few merits of TGA.
4. Define Impact sensitiveness test.
5. List the merits of event tree analysis.
6. What is called toxicity index?
7. Differentiate pool fire and jet fire.
8. List few PPE to prevent chemical hazard.
9. Write the causes of Bhopal disaster.
10. Write the lesson learnt from Mexico disaster.

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Discuss PHA in detail.

Or

(b) Explain types of risk with examples.

12. (a) Discuss the construction and working of ARC.

Or

(b) Write short notes on DSC.

13. (a) Write short notes on Various indices.

Or

(b) Mention few merits and demerits of reliable software's.

14. (a) Write short notes on chemical inventory analysis.

Or

(b) Sketch a suitable plant layout for chemical industry.

15. (a) Describe port Hudson disaster in detail.

Or

(b) Write short notes on Feyzin disaster.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Discuss HAZOP in detail.

Or

(b) Elaborate the construction and working of differential scanning calorimeter.

17. (a) Discuss the HAMGARS modules on heat radiation in detail.

Or

(b) Explain hazard identification based on the properties of chemical.

18. (a) Recall mexico disaster and its effects.

Or

(b) Discuss in detail ramussen masses report and the lessons learnt from it.

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C–2003	Sub. Code
	30635C

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Third Semester

Industrial Safety and Hygiene

HAZARDOUS WASTE MANAGEMENT

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define Hazardous waste.

2. List the major waste disposal methods.

3. Brief fly ash rule.

4. Why hazardous waste management is important?

5. Write the sources of solid wastes.

6. Mention the health effects of radioactive waste.

7. Define risk assessment.

8. Brief incineration.

9. What is called stabilization?

10. Write remedies for groundwater contamination.

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

Answer **all** the questions.

11. (a) Write short notes on 'The TREM card'.

Or

(b) Discuss the safe storage methods of hazardous waste.

12. (a) Write short notes on 'Transportation of chemicals'.

Or

(b) Discuss the rules of MSIHC 1989.

13. (a) Describe the collection of waste in detail.

Or

(b) Discuss the safe disposal of nuclear waste.

14. (a) Brief Environmental risk with examples.

Or

(b) Differentiate autoclave and micro clave.

15. (a) Discuss the physicochemical process for hazardous waste.

Or

(b) Write short notes on the anaerobic decomposition of solid waste.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Describe various disposal methods of hazardous waste.

Or

(b) Elaborate the battery management rules.

17. (a) Discuss the radioactive waste safe disposal and its health effects.

Or

(b) Discuss landfill design for hazardous waste in detail.

18. (a) Describe the chemical treatment process for MSW.

Or

(b) Discuss biodegradation of toxic waste in detail.

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C–2004	Sub. Code
	30641

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Fourth Semester

Industrial Safety and Hygiene

ENVIRONMENTAL SAFETY MANAGEMENT

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. List few properties of air pollutants.

2. Write the causes of ozone holes.

3. Classify water pollutants.

4. Write the objectives of wastewater treatment

5. Differentiate recycling and reuse

6. Define radioactive waste.

7. Write the working principle of gas chromatograph.

8. Write the purpose of lux meter.

9. Write the pollution prevention methods in dying industries.

10. Define Eco friendly energy.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write short notes on clean coal combustion technology.

Or

(b) Brief the hazards due to ozone depletion.

12. (a) How to control water pollution in chemical industries? Explain.

Or

(b) Discuss the Scope of effluent quality law.

13. (a) Write about the disposal of hazardous waste.

Or

(b) Discuss incineration and vitrification in detail.

14. (a) Write short notes on the cyclone separator.

Or

(b) How do you control gaseous emission? Explain.

15. (a) Explain the procedure to control pollution in paper industries.

Or

(b) Explain pollution control methods in pigment industries.

Part C

$(3 \times 10 = 30)$

Answer **all** the questions.

16. (a) Elaborate air pollutants' effects on animals and its prevention methods.

Or

(b) Discuss the strategies to reduce automobile pollution in India.

17. (a) Discuss the various sampling and analysis of water in detail.

Or

(b) Explain the construction and working of atomic absorption spectrometer.

18. (a) Discuss the pollution control methods in petroleum industries.

Or

(b) Discuss the importance of pollution control in cement factories.

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C–2005	Sub. Code 30642

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Fourth Semester

Industrial Safety & Hygiene

EHS MANAGEMENT STANDARDS

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Write the features of OSHAS 18001.

2. Write the benefits of ISO certification.

3. Name few international standards.

4. Write the objectives of short-term plan.

5. Define accident report.

6. What do you mean by 'Documentation'?

7. Define EMS.

8. Define audit plan.

9. Brief Eco-labeling.

10. Write the types of EIA.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Discuss the development of OSHAS standard.

Or

(b) Write the guidelines for implementing ISO 9001.

12. (a) Discuss the development of an action plan.

Or

(b) Discuss the content of OH and S policy.

13. (a) Describe the importance of EHS training.

Or

(b) Write short notes on records management.

14. (a) Write about the importance of ISO 14000 to management auditing.

Or

(b) Discuss the general principles of environmental audit.

15. (a) Write short notes on ISO 14024.

Or

(b) Discuss the scope and benefits of EIA.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Describe the guidelines for implementing ISO 14001.

Or

(b) Elaborate OSHAS 18001 strategy and planning in detail.

17. (a) Discuss the structure and responsibilities of Top-level management.

Or

(b) Discuss the guidelines and principles of ISO14004.

18. (a) Describe the general principles and stages of LCA in detail.

Or

(b) Write about the EIA methodology in detail.

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C–2007	Sub. Code
	30643B

M.Sc. DEGREE EXAMINATION, APRIL 2024.

Fourth Semester

Industrial Safety and Hygiene

SAFETY IN LOGISTICS AND WAREHOUSE

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is logistics?

2. Give the objectives of warehouses.

3. What is TREM card?

4. Define Static Electricity.

5. What is conveyor?

6. Write about mechanical handling accessories.

7. What is slinging?

8. What is load center?

9. Define fire load.

10. What is fire monitor?

Part B (5 × 5 = 25)

Answer **all** questions.

11. (a) Explain Logistics system.

Or

(b) Write the functions of warehouses.

12. (a) How to select the drivers?

Or

(b) Explain emergency planning.

13. (a) Write about conveyor hazards.

Or

(b) Explain forklift training.

14. (a) Write about handling ad storage of compressed gas cylinders.

Or

(b) Explain manual handling accessories.

15. (a) What are the different types of portable fire extinguishers?

Or

(b) Explain foam pourer system.

Part C (3 × 10 = 30)

Answer **all** questions.

16. (a) Explain logistics system designers.

Or

(b) Give the significance of warehousing in logistics.

17. (a) Write about forklift inspection and maintenance.

Or

(b) How to determine fire load?

18. (a) Explain fire hydrant system.

Or

(b) Explain dow fire and explosion index.

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C–2009	Sub. Code
	30644A

M.Sc. DEGREE EXAMINATION, APRIL 2024

Fourth Semester

Industrial Safety and Hygiene

SAFETY IN FIRE WORKS INDUSTRY

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Define fire triangle.

2. What is 'Friction sensitivity'?

3. Write the causes of static charge.

4. Name few PPE used for respiratory protection.

5. Define fuse fixing.

6. State factories act.

7. What do you mean by 'Magazine'?

8. Classify material handling.

9. List few unsafe acts in fireworks.

10. Write the first-aid procedure for fire burns.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write short notes on Metal powders.

Or

(b) Write short notes on Impact sensitivity.

12. (a) Classify Hazards in fireworks factories.

Or

(b) Brief the dust prevention methods.

13. (a) Write down the scope of explosives act.

Or

(b) Discuss safe packing methods in fireworks.

14. (a) Explain the nitric acid handling method.

Or

(b) Write short notes on Manual material handling.

15. (a) Explain the storage of residues in fireworks industries.

Or

(b) Discuss the fire mock drill procedure.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Discuss the fire properties of any four chemicals used in fireworks.

Or

(b) Discuss any one fire accident case study and the lessons learned in detail.

17. (a) Sketch and explain various hand tools.

Or

(b) Classify fire extinguishers and their applications in detail.

18. (a) Discuss the concepts of waste and its control methods in detail.

Or

(b) Describe the role of fire services in India.

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C–2010	Sub. Code
	30644B

M.Sc. DEGREE EXAMINATION, APRIL 2024

Fourth Semester

Industrial Safety and Hygiene

PROCESS 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 consequence of deviation?

2. Define energy balance.

3. Differentiate unsafe act and unsafe condition.

4. List the limitation of FMEA.

5. Brief Pre-start-up review.

6. Write the objectives of safety audits.

7. Write the purpose of the incident investigation.

8. Brief trade secrets.

9. What is 'Emergency planning'?

10. List few contractor employer responsibilities.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write short notes on the safety system.

Or

(b) State the significance of process safety information.

12. (a) Describe the FTA and its merits and demerits.

Or

(b) Point out the safety training needs and objectives.

13. (a) Write about the mechanical integrity in detail.

Or

(b) Stress the importance of quality assurance.

14. (a) Explain any one investigation methodology.

Or

(b) Write short notes on employee participation.

15. (a) List the contractor selection procedures.

Or

(b) Brief the term hot working permit.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Discuss relief system design in detail.

Or

(b) Discuss the different types of PPE used in process industries.

17. (a) Describe the management of change in detail.

Or

(b) How do you conduct safety audits in process industries? Explain.

18. (a) Discuss the employee responsibilities in detail.

Or

(b) Discuss modern safety concepts in process industries.

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C– 2011	Sub. Code 30644C

M.Sc. DEGREE EXAMINATION, APRIL 2024

Fourth Semester

Industrial Safety and Hygiene

DUST EXPLOSION

(2019 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Classify Zones.

2. Define MIE.

3. Write the applications of cyclones.

4. Define the term sparkcorona.

5. List the merits of Good Housekeeping.

6. What are the sources of Dust?

7. Define flammability.

8. Write about the thermal sensitivity.

9. What is called mitigation?

10. Write the advantages of the interlocking system.

Part B (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write short notes on Dust fire.

Or

(b) Discuss the safety parameter of dust.

12. (a) Sketch and Explain dust separators.

Or

(b) Write short notes on Electrostatic hazards.

13. (a) Describe the evaluation of dust.

Or

(b) Discuss the control measures of particulates.

14. (a) Brief the combustibility test procedure.

Or

(b) Differentiate impact and friction sensitivity.

15. (a) Write short notes on Explosion isolation.

Or

(b) Describe the prevention of dust accumulation outside the process equipment.

Part C (3 × 10 = 30)

Answer **all** the questions.

16. (a) Discuss the explosion characteristics in detail.

Or

(b) Discuss the hazards of powder coating and its reduction methods.

17. (a) Enumerate the dust control approaches and strategies.

Or

(b) Discuss the material safety specification for dust layers.

18. (a) Prepare a dust control plan for the cement factory in detail.

Or

(b) Sketch and explain any four PPE Used in dust control.

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