

**C-9027**

**Sub. Code**

**21511**

**CERTIFICATE COURSE EXAMINATION, APRIL 2023.**

**Non-Semester**

**Fire and Industrial Safety Management**

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

**(2019 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. What is 'Fire'?
2. Expand EDP.
3. Give examples for Hazard.
4. Categorize the fire extinguishers.
5. List out the fire detectors.
6. Classify fire detection zones.
7. State the purpose of pump house.
8. Stress the requirements of Hydrant.
9. What are the types of Exits?
10. Explain the term 'Fire Load'.

**Part B**

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Write down the characteristics of Fire.

Or

- (b) Brief the Fire Triangle with a diagram.

12. (a) State the terminology of Fire Extinguishing.

Or

- (b) Explain the function of a portable fire extinguisher with a simple diagram.

13. (a) Write about the UV and IR flame detectors.

Or

- (b) Point out the merit and demerits of fire detectors.

14. (a) Brief the function of a Hydrant system.

Or

- (b) Draw a maintenance check list for a Hydrant system.

15. (a) Discuss the responsibilities of Fire service department.

Or

- (b) Brief the sources of water supply and its requirements.

**Part C**

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Explain BLEVE with a diagram.

Or

(b) Give your suggestions to avoid fire hazards in a small scale industry.

17. (a) Brief the testing of Fire Extinguishers.

Or

(b) Tabulate a maintenance check list for Fire Extinguisher.

18. (a) Explain fire detection and alarm system with a simple and neat sketch.

Or

(b) Classify and explain fire zones in detail.

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**C-9028**

**Sub. Code**

**21512**

**CERTIFICATE COURSE EXAMINATION,  
APRIL 2023.**

**Non-Semester**

**Fire and Industrial Safety Management**

**ELECTRICAL AND CHEMICAL SAFETY**

**(2019 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. Write about few Electrical hazards.
2. Give the effect of chemicals on human bodies.
3. How you ensure the safety in the use of Electricity?
4. Differentiate Spark and Arc.
5. How the fluctuation of voltage is controlled?
6. What do you mean by 'No load protection'?
7. In what way the Environment affects the electrical apparatus?
8. What is called maintenance?
9. Name few electrical hazardous zones
10. How hazardous locations are protected?

**Part B**

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Write about the basics of Electricity.  
Or  
(b) Explain the causes for Shock, Arc and Blast.
12. (a) List out the electrical hazards with remedies.  
Or  
(b) Explain electrical causes for fire and explosion.
13. (a) Brief the protection against Over voltage and Under voltage.  
Or  
(b) Describe PPE.
14. (a) State the role of environment on selection of electrical equipments.  
Or  
(b) Brief the Work permit system with its significances.
15. (a) Why gases are grouped? Explain.  
Or  
(b) Discuss about the role of Equipment Certifying Agencies.

**Part C**

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Brief the effect of Electricity on human bodies.  
Or  
(b) Discuss chemical safety in detail.

17. (a) Clarify the classes of insulations.

Or

(b) Give short notes on Corona effect and Static Electricity.

18. (a) Elaborate electrical Guarding.

Or

(b) State the importance of PPE on electricity usage.

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**C-9029**

**Sub. Code**

**21513**

**CERTIFICATE COURSE EXAMINATION, APRIL 2023.**

**Non-Semester**

**Fire and Industrial Safety Management**

**INDUSTRIAL SAFETY AND TOXICOLOGY**

**(2019 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define 'Toxicology'.
2. What do you mean by 'Hygiene'?
3. What is PPE?
4. State the purpose of Ventilation.
5. Point out the effects of toxic materials on human beings.
6. Brief HAZCHEM.
7. What is CTS?
8. Why 'White Finger' is happened?
9. Expand the term 'HVAC'.
10. What for 'Audiometry' is conducted?

**Part B**

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Write few words about 'Human Physiology'.

Or

- (b) List out the industrial diseases related to various human body systems.

12. (a) Explain Ionizing and Non – Ionizing radiations.

Or

- (b) Brief the administrative controls on industrial hazards.

13. (a) How toxic materials enter into human body?

Or

- (b) Write short notes on Exposure limits and response to toxins.

14. (a) Give an introduction to industrial Ergonomics.

Or

- (b) Explain MSD and WRULD.

15. (a) Describe 'Biological Monitoring'.

Or

- (b) What is BEI and its limits?



**Part C**

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Describe the effect of Hygiene on human body.

Or

- (b) How you improve safety in an industry in terms of Hygiene?

17. (a) Discuss about the effect of Illumination on workmanship.

Or

- (b) Give your comments to improve production by hazard control.

18. (a) Write about various toxic agents with examples.

Or

- (b) Why 'Ergonomics' is require to improve safety? Brief.
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**C-9030**

**Sub. Code**

**21514**

**CERTIFICATE COURSE EXAMINATION, APRIL 2023.**

**Non-Semester**

**Fire and Industrial Safety Management**

**CONSTRUCTION SAFETY**

**(2019 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Define 'Hazard'.
2. What do you understand from the word 'Construction'?
3. List out the causes of accidents.
4. What is 'Confined Space'?
5. State the use of 'Back Hoe Loader'.
6. Name the various cranes,
7. Differentiate Scaffold and Ladder.
8. Why toe board is provided?
9. What is static load?
10. How we safe from sharp and moving parts?

**Part B**

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Write short notes on 'House Keeping'.

Or

- (b) How head, eye and ear are protected?

12. (a) What are the safety precautions to prevent Collapse?

Or

- (b) State the precautions on handling of Explosives.

13. (a) List out the equipments used in road making and their specific uses.

Or

- (b) Give details of safety measures on Manual Handling.

14. (a) Explain any two of the scaffoldings.

Or

- (b) Brief the safe uses of Ladders.

15. (a) Describe the effect of Ergonomics on Construction activities.

Or

- (b) What are the safety precautions to be taken in using compressed air tools?

**Part C**

(3 × 10 = 30)

Answer **all** the questions.

16. (a) How a good housekeeping helps to improve safety during construction?

Or

- (b) Stress the importance of providing welfare facilities to enhance safety.

17. (a) What are the steps to be taken before excavation to minimize hazards?

Or

- (b) Point out the general precautions to be implemented in Tunneling and Drilling.

18. (a) State the various steps to be considered in safe usage of road making equipments.

Or

- (b) As a Safety officer how you ensure safety in construction activities?
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**C-9031**

**Sub. Code**

**21515**

**CERTIFICATE COURSE EXAMINATION, APRIL 2023.**

**Non-Semester**

**Fire and Industrial Safety Management**

**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 'Hazard'.
2. What is 'PHA'?
3. What is called HAZID?
4. Write the objectives of risk estimation.
5. List the limitations of what-if analysis.
6. Define FTA.
7. What do you mean by 'SIL'?
8. Define risk priority number.
9. Brief safety life cycle.
10. Write the importance of third-party certification.

**Part B**

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Write about functional safety in detail.  
Or  
(b) Explain the ALARP with a suitable example.
12. (a) Discuss various PHA methods.  
Or  
(b) Write short notes on risk management.
13. (a) Write down the merits and demerits of checklist analysis.  
Or  
(b) Discuss human reliability analysis and its applications.
14. (a) Explain the SIL determination technique.  
Or  
(b) Discuss the term intelligent HAZOP.
15. (a) Discuss the significance of maintenance in safety aspects.  
Or  
(b) Write about electrical area classification.

**Part C**

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Discuss the safety instrumentation in detail.  
Or  
(b) Elaborate on the evolution of hazard analysis in detail.

17. (a) Describe the data collection procedure for hazard analysis.

Or

(b) Discuss FMECA methodology in detail.

18. (a) Discuss the importance of design engineering in the safe erection of machinery.

Or

(b) Elaborate on explosion protection methods in detail.

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**C-9032**

**Sub. Code**

**21516**

**CERTIFICATE COURSE EXAMINATION, APRIL 2023.**

**Non-Semester**

**Fire and Industrial Safety Management**

**EHS LEGISLATIONS**

**(2019 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. Write the basic qualification for inspecting staff.
2. What is called Hazard?
3. Write the sources of air pollution.
4. State water act 1974.
5. Mention the duties of the occupier.
6. Write the need for safety data sheets.
7. Define SMPV.
8. Write the objectives of gas cylinder rules.
9. Mention the benefits of ISO Certification.
10. Write the scope of OSHAS 18000.



**Part B**

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Write short notes on Statutory authorities.  
Or  
(b) List any five TN factories rule 1950.
12. (a) Write short notes on Biomedical waste 1989.  
Or  
(b) Discuss the function of the pollution control board.
13. (a) Discuss the term notification of major accidents.  
Or  
(b) Prepare an onsite emergency plan for a chemical factory.
14. (a) Discuss the scope of the Indian boiler act 1923.  
Or  
(b) Point out the precautions to be taken as per the petroleum rules.
15. (a) Brief the William Steiger act 1970.  
Or  
(b) Write short notes on ANSI.

**Part C**

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Discuss the health chapters of factories act 1948 in detail.  
Or  
(b) Discuss the prevention and control of air pollution.

17. (a) Describe the import of hazardous chemicals rules 1989.

Or

(b) Discuss the workman compensation act in detail.

18. (a) Discuss the contents of the construction workers' act in detail.

Or

(b) Discuss the scope and objectives of HASAWA 1974.

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**C-9033**

**Sub. Code**

**21517**

**CERTIFICATE COURSE EXAMINATION, APRIL 2023.**

**Non-Semester**

**Fire and Industrial Safety Management**

**SAFETY IN LOGISTICS AND WAREHOUSE  
INDUSTRY**

**(2019 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. What is 'Logistics'?
2. What for the warehouse is used?
3. Expand the term 'TREM'.
4. Draw any two warning symbols with their meaning.
5. State the purpose of Fork lift.
6. How crane is differed from Conveyor?
7. List out the material handling hazards.
8. What do you mean by EOT crane?
9. How fire load is determined?
10. Classify portable fire extinguishers.

**Part B**

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Write few words about Logistics Management.

Or

- (b) Clarify the types of warehouses with their uniqueness.

12. (a) Stress the importance of driver training.

Or

- (b) Point out the slogans in driver cabin.

13. (a) Differentiate manual handling and mechanical handling.

Or

- (b) Describe the safe operating procedures of Forklift.

14. (a) Elaborate the safe manual handling practices.

Or

- (b) Give few useful tips for safe storage of wire ropes and chains.

15. (a) State the better building design elements for fire safety.

Or

- (b) Brief the fire hydrant system with a simple sketch.

**Part C**

(3 × 10 = 30)

Answer **all** the questions.

16. (a) Explain the term 'need for Warehouse Management'.

Or

- (b) Discuss about effective storage and distribution of goods.

17. (a) State the purpose of Earth Chains and the effect of Static Electricity.

Or

- (b) Brief the necessity of driver relaxation and rest pauses.

18. (a) Describe the safety precautions during EOT crane operation.

Or

- (b) Give your ideas to minimize the fire accidents in an appartment.
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**C-9034**

**Sub. Code**

**21518**

**CERTIFICATE COURSE EXAMINATION, APRIL 2023.**

**Non-Semester**

**Fire and Industrial Safety Management**

**SAFETY INSPECTION AND AUDIT**

**(2019 onwards)**

Duration : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. Define inspection report.
2. State the purpose of 'Workplace inspection'.
3. Write the types of audits.
4. Brief the term interviewing.
5. Write the stages of LCA.
6. Write the rules for eco-labeling.
7. List out the content of OH and S policy.
8. Write the features of OSHAS 18001.
9. Mention the responsibilities of an auditor.
10. Define record retention.

**Part B**

(5 × 5 = 25)

Answer **all** the questions.

11. (a) Write about the importance of workplace inspection.  
Or  
(b) List the information required for workplace inspection.
12. (a) Discuss the methodology to conduct a safety audit.  
Or  
(b) Write short notes on post-audit activities.
13. (a) Write the guidelines of ISO 14004 in detail.  
Or  
(b) Classify EIA and its advantages.
14. (a) Explain the objectives of the short-term action plan.  
Or  
(b) Discuss the high-level structure(HLS).
15. (a) Prepare a safety audit questionnaire for a construction site.  
Or  
(b) Discuss audit documentation and report in detail.

**Part C**

(3 × 10 = 30)

Answer **all** questions.

16. (a) Elaborate safety inspection follow-up and monitoring methods in detail.  
Or  
(b) How do you understand the management systems and its assessment methods in detail.

17. (a) Discuss the general principles of environmental audit.

Or

(b) Compare ISO 45001 and OHSAS 18001 in detail.

18. (a) Discuss the types of records to be examined during the safety audit.

Or

(b) Describe the steps in ISO 14001 implementation plan in detail.

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