Sub. Code
21511

#### **CERTIFICATE COURSE EXAMINATION, APRIL 2022**

## Non – Semester

## **Fire and Industrial Safety Management**

# FIRE SAFETY : DESIGN, INSTALLATION AND MAINTENANCE

## (2019 onwards)

Duration: 3 Hours

Maximum : 75 Marks

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

- 1. Define 'Safety'.
- 2. What is 'BLEVE'?
- 3. What 'Hazard' means?
- 4. State the uses Extinguishers.
- 5. Expand the terms UV and IR.
- 6. Name few fire detectors.
- 7. What do you mean by 'Fire pump'?
- 8. List out the requirements of 'Hydrant'.
- 9. Why fire exits are needed?
- 10. What is the meaning of 'Occupant Load'?

#### **Part B** (5 × 5 = 25)

Answer **all** the questions.

11. (a) Write about the physical and chemical properties of Fire.

Or

- (b) Explain the modes of Heat Transfer.
- 12. (a) Classify Hazards.

Or

- (b) State the terminology of fire extinguishing technique.
- 13. (a) Write down the general requirements for fire detection and alarm system.

Or

- (b) List out the detectors and explain any one of them in detail.
- 14. (a) Explain the Hydrant system with a neat sketch.

Or

- (b) Discuss the maintenance of firefighting systems.
- 15. (a) Stress the requirements of Fire Exits.

Or

(b) List out the ways through which one can escape from a fire incident in a building.

2

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

Answer **all** the questions.

16. (a) Discuss about the fundamentals of Fire Safety.

Or

- (b) Classify Fire and write about the general causes of fire.
- 17. (a) Explain a portable fire extinguisher with a neat sketch.

Or

- (b) How you manage a fire accident with extinguishers?
- 18. (a) Give your ideas to manage a fire incident in a super market.

 $\mathbf{Or}$ 

(b) State the importance of providing emergency fire exits in your college bus.

3

## **CERTIFICATE COURSE EXAMINATION, APRIL 2022.**

## Non-Semester

## Fire & Industrial Safety Management

## ELECTRICAL AND CHEMICAL SAFETY

#### (2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

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

- 1. Define 'Hazard'.
- 2. List out some Chemical hazards.
- 3. Clarify the types of Electrical hazards.
- 4. State the effects of Short Circuits.
- 5. Name the components used to minimize Electrical hazards.
- 6. Brief FRLS.
- 7. When and where the inter lock system is needed?
- 8. Stress the use of Lock out and Tag out.
- 9. What is 'Hazardous Zone'?
- 10. How temperature is classified?

## **Part B** (5 × 5 = 25)

Answer **all** questions.

11. (a) Write about Current and Voltage.

Or

- (b) State Ohm's law and types of electrical faults.
- 12. (a) What are primary and secondary hazards?

Or

- (b) Differentiate Lightening Arrestor and Earthing.
- 13. (a) How Fuse is differed from Circuit Breaker?

Or

- (b) Give a short notes on ELCB with a neat sketch.
- 14. (a) Write few words about protection and inter lock system.

Or

- (b) What is Lock out and Tag out? Point out their uniqueness.
- 15. (a) Explain the intrinsically safe apparatus with details.

Or

(b) What do you mean by Explosion proof electrical apparatus?

 $\mathbf{2}$ 

**Part C** (3 × 10 = 30)

Answer all questions.

- 16. (a) Write short notes on :
  - (i) Power
  - (ii) Resistance
  - (iii) Capacitor and
  - (iv) Inductor

Or

- (b) Classify the Electrical faults.
- 17. (a) Brief the hazards due to Electricity.

Or

- (b) State your ideas on safe use of Electricity.
- 18. (a) Discuss hazardous zones in detail.

Or

(b) Describe the use of Barriers and Isolators.

3

Sub. Code
21513

## **CERTIFICATE COURSE EXAMINATION, APRIL 2022.**

## Non-Semester

## **Fire and Industrial Safety Management**

# INDUSTRIAL SAFETY AND TOXICOLOGY

#### (2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

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

- 1. What is 'Safety'?
- 2. Brief IH.
- 3. Define 'Noise'.
- 4. List out some physical hazards.
- 5. Name few toxic materials.
- 6. Expand ACGIH.
- 7. Brief the term 'Ergonomics'.
- 8. What do you understand the word 'Tendinitis'?
- 9. State the advantages of Sampling.
- 10. Point out few Neurological tests.

#### Part B

 $(5 \times 5 = 25)$ 

Answer **all** questions.

11. (a) Write short notes on Industrial Hygiene.

Or

- (b) Explain the digestive system with a neat diagram.
- 12. (a) Brief noise and vibration with their effects.

 $\mathbf{Or}$ 

- (b) Describe the importance of Ventilation.
- 13. (a) Write about the fundamentals of Toxicology.

 $\mathbf{Or}$ 

- (b) Discuss about the effects of toxic materials.
- 14. (a) Explain the Man Machine system.

Or

- (b) Write about safe Manual Handling.
- 15. (a) Write short notes on Sampling.

Or

(b) Explain the term 'sampling gases and vapours' in detail.

## **Part C** (3 × 10 = 30)

Answer all questions.

16. (a) Explain the various systems in human body.

Or

(b) Brief Industrial Hygiene and its significance.

 $\mathbf{2}$ 

17. (a) Clarify the effect of various physical hazards in an industry.

Or

- (b) Write about Ventilation and its importance.
- 18. (a) Why the 'Control of Toxicology' is essential?

 $\mathbf{Or}$ 

(b) Describe Audiometry and various health tests conducted on human body.

3

Sub. Code
21514

#### **CERTIFICATE COURSE EXAMINATION, APRIL 2022.**

## Non-Semester

## **Fire and Industrial Safety Management**

## CONSTRUCTION SAFETY

#### (2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

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

- 1. What is 'PPE'?
- 2. Write few common hazards during construction.
- 3. What is 'Excavation'?
- 4. Write the meaning of 'Access and Escape'.
- 5. Name few vehicles used in construction activities.
- 6. Expand MEWP.
- 7. Mention few unsafe conditions at construction sites.
- 8. Classify Scaffolds.
- 9. Give the meaning of 'Ergonomics'.
- 10. List out the various hazards due to electrical equipments.

**Part B** (5 × 5 = 25)

Answer all questions.

11. (a) State the common hazards on construction activities with their remedies.

Or

- (b) Explain the major causes of accidents during construction.
- 12. (a) Point out the factors which cause accidents on Excavation.

Or

- (b) Elaborate confined spaces and their peculiarities.
- 13. (a) Give the systematic procedures of road making.

Or

- (b) State the uses of Crane and the precautions to be followed on its functions.
- 14. (a) Discuses about the hazards of Scaffoldings.

Or

- (b) Write short notes on working platform and guard rails.
- 15. (a) Describe the role of Ergonomics in construction activities.

Or

(b) Give details about the safe uses of power driven machineries.

 $\mathbf{2}$ 

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

Answer **all** the questions.

16. (a) Brief the personal protective equipments used in construction activities.

Or

- (b) Why occupational health and hygiene should improve?
- 17. (a) Explain the steps to reduce accident during Excavation.

Or

- (b) Brief the responsibilities of supervisors to improve safe construction activities.
- 18. (a) How the hazards to be managed in road making process?

Or

(b) What are your suggestions for safe storage and usage of LPG?

3

Sub. Code
21515

#### **CERTIFICATE COURSE EXAMINATION, APRIL 2022.**

#### Non-Semester

## **Fire and Industrial Safety Management**

## HAZARD IDENTIFICATION, RISK ASSESSMENT AND RISK CONTROL

#### (2019 onwards)

Duration: 3 Hours

Maximum : 75 Marks

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

- 1. Define 'Risk'.
- 2. What do you mean by 'Safety'?
- 3. Expand HAZID.
- 4. What is the use of risk analysis?
- 5. State the meaning of the word 'Quantitative'.
- 6. Why hazard analysis is conducted?
- 7. Brief FMEA.
- 8. State the advantages of HAZOP.
- 9. Specify the purpose of safety measures.
- 10. Why maintenance is carried out?

Answer **all** questions.

11. (a) Write short notes on safety instrumentation

Or

- (b) What is the functional safety? Explain.
- 12. (a) List out the preliminaries of plant hazard analysis.

Or

- (b) Give details about risk assessment and management.
- 13. (a) What is 'Preliminary hazard analysis'?

Or

- (b) Explain 'What if analysis'.
- 14. (a) What are SIL determination techniques?

Or

- (b) Describe FMEA methodology.
- 15. (a) State the function of design and engineering in safety concepts.

Or

(b) List out the steps for safe explosion.

Part C

 $(3 \times 10 = 30)$ 

Answer **all** questions.

16. (a) Describe the evaluation of hazard analysis.

Or

(b) Explain any two quantitative hazard analysis.

 $\mathbf{2}$ 

17. (a) What are the risks to be analyzed in a plant?

 $\mathbf{Or}$ 

- (b) Explain any two risk assessment methods with details.
- 18. (a) What is HAZOP methodology? Brief

Or

(b) Why reporting and follow up are essential for safety development?

3

Sub. Code	
21516	

#### **CERTIFICATE COURSE EXAMINATION, APRIL 2022**

## Non – Semester

## **Fire Industrial Safety Management**

## **EHS LEGISLATIONS**

#### (2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

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

- 1. Brief EHS.
- 2. State the purpose of Factories act.
- 3. Write any four acts.
- 4. Why NOC is required?
- 5. Name the government authorities to control pollution.
- 6. Define 'Hazard'.
- 7. Specify few hazardous chemicals.
- 8. What do you mean by SMPV?
- 9. Differentiate Boiler and Pressure vessel.
- 10. Expand OSHAS.

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

Answer all the questions.

11. (a) As per Factories act who are the Statutory Authorities?

 $\mathbf{Or}$ 

- (b) Write about the salient features of welfare and working hours in Factories act 1949.
- 12. (a) State the powers of State control board of pollution. Or
  - (b) Discuss the prevention and control tips in Air act.
- 13. (a) Give details about the duties of authorities.

Or

- (b) What Hazardous chemical rules tell about notifications of major accidents?
- 14. (a) Give short note on Motor vehicle act.

Or

- (b) Explain Pesticides act.
- 15. (a) Write short notes on HASAWA.

Or

(b) Elaborate ANSI.

#### Part C

 $(3 \times 10 = 30)$ 

## Answer all questions.

16. (a) State the main features of Factories act.

#### Or

(b) Point out the provisions related to Safety officers and Inspecting staff.

 $\mathbf{2}$ 

17. (a) Explain Air act.

Or

- (b) Brief Bio Medical waste (Management and Handling) rules 1989.
- 18. (a) Describe the responsibilities of Occupier.

Or

(b) Discuss Explosives act in detail.

3

Sub. Code
21517

#### **CERTIFICATE COURSE EXAMINATION, APRIL 2022.**

## Non-Semester

## Fire & Industrial Safety Management

# SAFETY IN LOGISTICS AND WAREHOUSE INDUSTRY

#### (2019 onwards)

Duration: 3 Hours

Maximum : 75 Marks

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

- 1. Define 'Logistics'.
- 2. What is WMS?
- 3. State the purpose of TREM card.
- 4. List out the responsibilities of Driver.
- 5. Write the purpose of fork lift.
- 6. Differentiate crane and conveyor.
- 7. Write few hazards during material handling.
- 8. Classify cranes.
- 9. What is 'fire load'?
- 10. What are fire fighting systems?

Part B

 $(5 \times 5 = 25)$ 

Answer **all** questions.

11. (a) Write short notes on 'Logistics system'.

 $\mathbf{Or}$ 

- (b) What are the functions of Warehouses?
- 12. (a) Brief warning symbols and their purposes.

Or

- (b) Explain the importance of inspection and maintenance of vehicles.
- 13. (a) What are transport precautions?

Or

- (b) Write about grease rack operation and water rack operation.
- 14. (a) Discuss about the hazards during material handling.

Or

- (b) Point out the precautions to be taken on crane operation.
- 15. (a) How design of a building affects fire safety?

 $\mathbf{Or}$ 

(b) Elaborate the salient features of fire ,explosion and toxicity index.

#### Part C

 $(3 \times 10 = 30)$ 

Answer **all** questions.

16. (a) Brief the purpose of Logistics.

#### Or

(b) Discuss about MMS.

 $\mathbf{2}$ 

17. (a) Elaborate the responsibilities of driver and public.

 $\mathbf{Or}$ 

- (b) Discuss the inspection methods of tools and tackles.
- 18. (a) What are the steps to be followed to improve forklift safety?

 $\mathbf{Or}$ 

(b) Describe the methods to increase chain life.

3

#### **CERTIFICATE COURSE EXAMINATION, APRIL 2022.**

## Non-Semester

## Fire & Industrial Safety Management

## SAFETY INSPECTION AND AUDIT

#### (2019 onwards)

Duration : 3 Hours

Maximum : 75 Marks

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

- 1. Why audit is required?
- 2. Stress the importance of work place inspection.
- 3. Write about the objectives of audit.
- 4. Give few post audit activities.
- 5. What for ISO 14001 recognition is given?
- 6. What are EIA and EMS?
- 7. State the purpose of ISO 45001.
- 8. Write about the scope of certification.
- 9. Mark the objectives of IS 14489.
- 10. What are the contents in Annexure C?

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

Answer **all** questions.

11. (a) Explain the purpose of work place inspection.

Or

- (b) Discuss about the hazards in work place with their remedies.
- 12. (a) List out the benefits of safety Audit.

Or

- (b) Give the pre audit activities.
- 13. (a) Describe the guidelines and principles of ISO 14004.

Or

- (b) Discuss about the general principles of LCA.
- 14. (a) Brief the structure and features of ISO 18001.

Or

- (b) Explain the objectives and targets of OS and H policy.
- 15. (a) Write few words about preparing and executing audit activities.

Or

(b) Give the sequences of occupational safety and health audit.

 $\mathbf{2}$ 

**Part C** (3 × 10 = 30)

Answer all questions.

16. (a) State the importance of work place inspection to improve safety.

Or

- (b) How you enhance safety in work place?
- 17. (a) What are the requirements of safety audit?

 $\mathbf{Or}$ 

- (b) Differentiate ISO 14000 and ISO 14001.
- 18. (a) Brief the occupational safety and health audit.

Or

(b) Compare ISO 45001 and OHSAS 18001.

3