C–7262	Sub. Code
	50111/50311

COMMON FOR DIPLOMA IN FIRE AND INDUSTRIAL SAFETY MANAGEMENT/FIRE AND INDUSTRIAL SAFETY (3 YEARS) EXAMINATION, NOVEMBER 2025

First Semester

BASICS OF FIRE SAFETY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. What should you do if you see a spill on the floor?
   (a) Ignore it
   (b) Walk through it carefully
   (c) Clean it up yourself, even if you don't know what it is
   (d) Report it to your supervisor or a designated person

2. Which of these is NOT a fire hazard?
   (a) Overloaded electrical outlets
   (b) Flammable liquids stored improperly
   (c) A clean and organized workspace
   (d) Smoking near combustible materials

3. When using a fire extinguisher, what does the acronym PASS stand for?
   (a) Pull, Aim, Squeeze, Sweep
   (b) Push, Alarm, Shout, Spray
   (c) Point, Aim, Shoot, Stay
   (d) Panic, Aim, Spray, Scurry

4. Which of these is NOT a type of eye protection?
   (a) Safety gloves (b) Face shield
   (c) Welding helmet (d) Baseball cap

5. What should you wear to protect your hands when working with sharp tools?
   (a) Wool gloves
   (b) Rubber gloves
   (c) Cut-resistant gloves
   (d) Gardening gloves

6. What type of hand protection is best suited for handling corrosive chemicals?
   (a) Leather gloves (b) Nitrile gloves
   (c) Cotton gloves (d) Cut-resistant gloves

7. Which type of fire detector is designed to sense the presence of invisible products of combustion?
   (a) Heat Detector (b) Smoke Detector
   (c) Flame Detector (d) Beam Detector

8. Which of the following can help protect your skin from the sun's harmful rays?
   (a) Sunglasses (b) Sunscreen
   (c) A hat (d) All of the above

9. What type of respiratory protection should you use in a dusty environment?
   (a) A surgical mask (b) A bandana
   (c) A dust mask (d) A full-face respirator

10. Which of the following is a safe way to store flammable liquids?
   (a) In a clearly labeled, tightly sealed container
   (b) In a plastic bag under the sink
   (c) In an open container near a heat source
   (d) In a glass bottle on a high shelf

Part B (5 × 5 = 25)

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

11. (a) Describe the concept of a "safety culture" and explain its significance in a workplace.

Or

(b) What are the key steps involved in conducting a risk assessment?

12. (a) Explain the proper way to fit and adjust a safety helmet for maximum protection.

Or

(b) Describe the different types of safety goggles and their specific applications.

13. (a) What are the different types of leg injuries that can occur in a workplace, and what measures can be taken to prevent them?

Or

(b) Explain the role of valves in a sprinkler system.

14. (a) How does a smoke detector differentiate between smoke and steam?

Or

(b) Discuss the importance of proper hygiene practices in preventing skin problems in the workplace.

15. (a) Describe the different types of air-purifying respirator cartridges and their specific applications.

Or

(b) Describe the safety precautions to be followed during hot work operations like welding.

Part C (5 × 8 = 40)

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

16. (a) Outline the essential components of an effective emergency response plan.

Or

(b) Explain the purpose and key elements of a permit-to-work system.

17. (a) Describe the different types of safety helmets and their appropriate applications.

Or

(b) Compare and contrast smoke, heat, and flame detectors in fire safety systems.

18. (a) Explain the advantages and disadvantages of wet pipe and dry pipe sprinkler systems.

Or

(b) Discuss the role of ergonomics in preventing workplace injuries, with a focus on hand tools and workstations.

19. (a) Describe the different types of fire alarm notification appliances and their functions.

Or

(b) Explain what bloodborne pathogens are and how to protect against them in the workplace.

20. (a) Define “confined space” and describe the associated hazards.

Or

(b) Explain the key components of a fall protection system for working at heights.

C–7263

Sub. Code
50112

DIPLOMA EXAMINATION, NOVEMBER 2025

First Semester

Fire and Industrial Safety Management

CONSTRUCTION SAFETY

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following is NOT a common problem impeding safely in the construction industry?

   (a) Lack of proper training

   (b) Poor communication between workers

   (c) Overly strict regulations

   (d) Inadequate safely equipment

2. What is the purpose of a pre-construction meeting?

   (a) To negotiate the contract terms

   (b) To discuss the project schedule and timeline

   (c) To identify and address potential safety hazards

   (d) To finalize the project budget

3. What is the primary hazard associated with excavations and trenches?

(a) Falls from heights

(b) Cave-ins

(c) Electrocution

(d) Exposure to hazardous materials

4. Which of the following is NOT a standard safety measure for scaffolding?

(a) Ensuring proper footing and bracing

(b) Providing guardrails and toe boards

(c) Overloading the scaffold with materials

(d) Conducting regular inspections

5. What is the minimum height at which fall protection is typically required according to OSHA standards?

(a) 4 feet (b) 6 feet

(c) 8 feet (d) 10 feet

6. Which of the following is NOT a component of a personal fall arrest system?

(a) Full-body harness

(b) Lanyard

(c) Anchor point

(d) Safety goggles

7. Which type of crane is typically used for lifting heavy loads on construction sites?

(a) Mobile crane (b) Tower crane

(c) Overhead crane (d) Gantry crane

8. What is the primary hazard associated with concrete mixers and vibrators?

(a) Falls from heights

(b) Entanglement

(c) Electrocution

(d) Being struck by moving parts

9. Which of the following is NOT a common method of demolition?

(a) Manual demolition

(b) Mechanical demolition

(c) Implosion

(d) Hydro-demolition

10. What is the primary purpose of a pre-survey inspection in demolition work?

(a) To assess the structural integrity of the building

(b) To identify potential hazards and risks

(c) To develop a demolition plan

(d) To obtain necessary permits

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

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

11. (a) Discuss the main causes of fatal construction accidents and their prevention.

Or

(b) How does the construction industry compensate workers for injuries sustained on the job?

12. (a) Describe the hazards of excavation work and safety measures for trenches and shafts.

Or

(b) Explain the risks involved in blasting operations. What are the pre-blast and post-blast inspection procedures to ensure safety?

13. (a) Discuss OSHA fall protection requirements and the use of safety equipment (belts, nets, arrestors)

Or

(b) What are the specific risks associated with working on fragile roofs? Explain the safety measures required for such work.

14. (a) Describe safety considerations for hoisting cranes (selection, operation, inspection) and key checklist points.

Or

(b) Discuss hazards of portable electrical tools and how to mitigate them.

15. (a) Explain the concept of a 'safe clearance zone' in demolition work. How is it established and maintained?

Or

(b) Discuss health hazards from demolition (dust, debris) and measures to protect workers and the environment.

Part C

(5 × 8 = 40)

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

16. (a) Explain the importance of contractual clauses in allocating safety responsibility.

Or

(b) Discuss the role of education and training in reducing construction accidents. What are the key topics that should be covered in safety training programs?

17. (a) Describe design aids for safe construction and their contribution to risk reduction.

Or

(b) Discuss the safety measures required for road construction projects. How do they differ from other types of construction projects?

18. (a) Discuss the relationship between quality assurance (QA) and safety in construction.

Or

(b) Analyze a case study of an accident involving a fall from height in the construction industry. What lessons can be learned from the incident?

19. (a) Discuss the risks associated with manual handling of construction materials? How can these risks be reduced through proper training and techniques?

Or

(b) Discuss the role of professional organizations and institutions in promoting construction safety.

20. (a) Explain unique safety challenges in high-rise building construction and specific hazards/safety measures?

Or

(b) Describe safety considerations in power plant construction and specific risks/management strategies.

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C–7264

Sub. Code
50121

DIPLOMA EXAMINATION, NOVEMBER 2025

Second Semester

Fire and Industrial Safety Management

HAZARD IDENTIFICATION, RISK ASSESSMENT AND RISK CONTROL

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the questions.

1. Which of the following best describes the concept of ALARP?

   (a) Eliminating all risks, regardless of cost

   (b) Reducing risks t a level that is as low as reasonably practicable

   (c) Accepting all risks as a necessary part of operations

   (d) Transferring risks to a third party

2. What is the primary purpose of a Risk Register?

   (a) To document and track identified risks

   (b) To provide a detailed analysis of root causes

   (c) To outline emergency response procedures

   (d) To record safety training records

3. Which of the following is NOT a benefit of conducting a Risk Analysis?

(a) Improved decision-making

(b) Increased efficiency

(c) Guaranteed elimination of all risks

(d) Enhanced safety performance

4. What is the primary goal of Root Cause Analysis?

(a) To identify the immediate cause of an incident

(b) To determine the underlying reasons for an incident

(c) To assign blame for an incident

(d) To develop corrective actions

5. Which safety management tool uses a structured approach to identify potential deviations from design intent?

(a) Hazop (b) FTA

(c) FMEA (d) ETA

6. What does FMEA stand for?

(a) Failure Mode and Effect Analysis

(b) Fault Mitigation and Elimination Assessment

(c) Function Mapping and Error Analysis

(d) Failure Mode and Event Analysis

7. Which of the following is the first step in the HIRA process?

(a) Risk Analysis

(b) Hazard Identification

(c) Risk Evaluation

(d) Risk Control

8. A Risk Matrix is primarily used for :

(a) Quantifying the likelihood of risks

(b) Evaluating the severity of consequences

(c) Prioritizing risks based on likelihood and consequence

(d) Developing risk control measures

9. Which major industrial disaster highlighted the importance of process safety management?

(a) Bhopal Gas Tragedy

(b) Flixborough Disaster

(c) Seveso Disaster

(d) Chernobyl Disaster

10. What is the primary purpose of analyzing past accidents in risk assessment?

(a) To predict future accidents with certainty

(b) To learn from past mistakes and prevent similar incidents

(c) To assign blame for past incidents

(d) To develop emergency response plans

Part B

$(5 \times 5 = 25)$

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

11. (a) Differentiate between a hazardous event and an unsafe act, providing examples of each.

Or

(b) Outline the steps involved in Preliminary Hazard Analysis.

12. (a) What is the purpose of Job Safety Analysis and how is it performed?

Or

(b) Outline the steps involved in the Risk Analysis Process.

13. (a) Describe the Hazop Methodology and its application in hazard identification.

Or

(b) Explain the purpose of Fault Tree Analysis (FTA) and how it is conducted.

14. (a) Explain the concept of 'risk appetite' and its implications for risk management.

Or

(b) Discuss the significance of the Risk Matrix in evaluating hazards and risks.

15. (a) Explain the Seveso disaster and its implications for chemical accident prevention.

Or

(b) Describe the Flixborough disaster and its impact on risk assessment practices.

Part C

(3 × 10 = 30)

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

16. (a) Discuss the significance of understanding the 'Fundamentals of Hazard' in risk management.

Or

(b) Explain the concept of Human Error Analysis (HEA) in risk assessment.

17. (a) Discuss the various techniques used to identify risks, such as brainstorming, checklists, hazard and operability studies.

Or

(b) Compare and contrast qualitative and quantitative approaches to Risk Analysis.

18. (a) Explain how the Risk Priority Number (RPN) is calculated and Provide examples of FMEA applications in different industries.

Or

(b) Describe the different types of FMEA and their applications.

19. (a) Discuss the challenges associated with identifying hazards in complex systems.

Or

(b) Discuss the importance of involving stakeholders in the risk assessment process.

20. (a) Discuss how past accident analysis can be used as information sources for hazard analysis.

Or

(b) Analyze the Mexico City disaster and its implications for the storage and handling of hazardous materials.

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C–7265	Sub. Code 50122

DIPLOMA EXAMINATION, NOVEMBER 2025.

Second Semester

Fire and Industrial Safety Management

SAFETY INSPECTION AND AUDIT

(2023 onwards)

Duration : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** questions.

1. Which of the following is NOT a typical cause of near-miss' incidents in the workplace?

   (a) Inadequate training

   (b) Poor housekeeping

   (c) Equipment failure

   (d) Completion of a safety audit

2. What is the primary purpose of using checklists during workplace inspections?

   (a) To ensure consistency and completeness in the inspection process

   (b) To replace the need for trained inspectors

   (c) To create additional paperwork for record-keeping

   (d) To identify potential hazards after an accident has occurred

3. Which of the following is a key difference between a safety audit and a safety inspection?

(a) Safety audits are conducted more frequently than safety inspections

(b) Safety audits focus on compliance with regulations, while safety inspections focus on identifying hazards

(c) Safety audits are more comprehensive and systematic than safety inspections

(d) Safety audits are conducted by external parties, while safety inspections are conducted by internal personnel

4. What is the main goal of interviewing employees during a safety audit?

(a) To gather information about their personal lives

(b) To assess their understanding of safety procedures and identify any concerns

(c) To determine their, level of job satisfaction

(d) To evaluate their performance in their respective roles

5. The 'context of the organization' in ISO 45001 refers to

(a) The physical location of the organization's facilities

(b) The internal and external issues that can affect the OHSMS

(c) The financial resources available to the organization

(d) The number of employees working for the organization

6. 'Emergency preparedness and response' in OHSMS involves

(a) Developing plans and procedures to respond to potential emergencies

(b) Conducting regular fire drills

(c) Providing first-aid training to all employees

(d) All of the above

7. Environmental aspects' in ISO 14001 are

(a) The elements of an organization's activities, products, or services that can interact with the environment

(b) The positive impacts of an organization's operations on the environment

(c) The environmental regulations that an organization must comply with

(d) The environmental goals that an organization sets for itself

8. The purpose of 'management review' in ISO 14001 is to

(a) Ensure the EMS is suitable, adequate, and effective

(b) Evaluate the environmental performance of the organization

(c) Identify opportunities for improvement in the EMS

(d) All of the above

9. 'Product environmental footprint' (PEF) is a measure of

(a) The carbon emissions associated with a product's life cycle

(b) The environmental impacts of a product throughout its life cycle

(c) The energy consumption associated with a product's manufacturing

(d) The waste generated during a product's disposal

10. Public participation in EIA is important because

(a) It ensures that the concerns and views of affected communities are considered

(b) It promotes transparency and accountability in the decision-making process

(c) It can lead to better environment outcomes

(d) All of the above

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

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

11. (a) Explain the key steps involved in planning a workplace inspection.

Or

(b) What are the key qualities and skills required for an effective inspection team?

12. (a) Differentiate between the various types of safety audits.

Or

(b) How is audit evidence collected and evaluated during a safety audit?

13. (a) Discuss the 'Plan-Do-Check-Act' cycle and its role in OHSMS.

Or

(b) What are the success factors for implementing an effective OH & S Management System?

14. (a) Discuss the specifications, objectives, and scope of ISO 14001.

Or

(b) Discuss the role of environmental policy in an EMS.

15. (a) Differentiate between Type I and Type II eco-labels.

Or

(b) Discuss the scope and benefits of an Environmental Impact Statement (EIS).

Part C $(5 \times 8 = 40)$

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

16. (a) Discuss the importance of workplace inspections in ensuring a safe and healthy working environment.

Or

(b) Discuss the role of checklists in conducting effective workplace inspections.

17. (a) Discuss the importance of interviewing employees during a safety audit.

Or

(b) How can the results of a safety audit be used to drive continuous improvement in safety management?. Explain with example.

18. (a) Discuss the requirements for 'risk assessment and opportunities' in ISO 45001.

Or

(b) Explain the importance of 'emergency preparedness and response' in OHSMS.

19. (a) Discuss the concept of 'environmental aspects and their significance in ISO 14001.

Or

(b) Discuss the process of 'management review' in the context of ISO 14001.

20. (a) Explain the concept of 'product environmental footprint' (PEF) and its relevance.

Or

(b) Discuss the role of stakeholders in the EIA process.

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