

PRACTICAL QUESTION PAPER

Basics of Risk Analysis and Accident Prevention methods

Name of Job Role with Level	Basics of Risk Analysis and Accident Prevention methods	Reference Code (NSQF Level 4)		NM-04-CO-03005-2024 V1-SSDF NCrf/	
Type of Question Paper (Theory/ Practical)	Practical	Batch Name/ Batch Id			
Duration:	1 Hour	Max Marks:	50	Obtained Marks	
Name of Candidate		Aadhaar Number			
Candidate's Father Name		Candidate Signature			
Assessor Name and Signature		Trainer Name and Signature			
TP Name		TC Name			
TP/TC Stamp with Signature		Date			

INSTRUCTIONS TO THE CANDIDATES

1. Candidates are not permitted to leave the examination hall before the last 30 minutes. They must seek permission from the examiner before leaving the hall.
2. Write your name, Aadhaar Number, father name, Signature clearly in the designated space.
3. The enclosed paper contains 3 sections Theory (MCQs & Written questions). Marks are mentioned against each question.
4. Use of laptops/ Mobile Phone is not permitted during assessment.
5. Use only Black or Blue ball point pen. Don't do any rough work in paper.
6. Do not mark multiple answers for one question, in case of multiple marking, you will not be given any marks for that question.
7. The passing criteria is as per Qualification Pack.
8. There are multiple correct answers to some of the questions.



Basics of Occupational Hazards and Risk Management

NSQF Level 4

Theory- 50 marks

Duration- 60 minutes

Marks Scored:

NAME:	
FATHER'S NAME:	
DATE:	
CENTRE:	
BATCH ID:	
CANDIDATE'S ID:	

SECTION: PRACTICAL	
PC-1: Understand basic definitions- incident, accident, Injury, lost time injury, unsafe condition, unsafe Acts, dangerous occurrences, hazards, error, near miss. (5*1 = 5 Marks)	
1	<p>Scenario: In a workshop:</p> <ul style="list-style-type: none"> • A worker cuts his hand while not using gloves. • Another tries to fix a live machine – no injury occurs. • A wire is hanging loose near a walkway. • Sparks from welding catch fire to rags. • A worker slips on oil but doesn't fall. <p>Question</p> <p>Identify each event using correct terms: incident, accident, injury, lost time injury, unsafe act, unsafe condition, dangerous occurrence, hazard, error, near miss.</p>
PC-2: Understand "Hazard Identification and risk assessment." (5*1 = 5 Marks)	
2	What are the main steps in a risk assessment process?
PC-3: Understand and carry out "HAZOP- Hazard, operability analysis" and "Job safety analysis." (2.5*2 = 5 Marks)	
3	<p>Scenario: You are working on a project that involves setting up a new machine in a manufacturing plant. The machine involves moving parts and electrical connections. Before beginning the setup, you need to conduct a Job Safety Analysis (JSA) and HAZOP.</p> <p>Question:</p> <p>Q1: What is one potential hazard you should identify during the JSA for this task? Q 2: How would you assess the risk of this hazard?</p>
PC-4: Understand theories of accident causation- Heinrich's Domino theory, "Heinrich 300-29-1 model, "Ferrell's Human Factor Model", "Petersen's Accident/Incident Model" and Reason's Swiss Cheese Model". (5*1 = 5 Marks)	
4	Can you explain, in your own words, how Heinrich's Domino Theory applies to accidents in the workplace, and how you would apply this theory to prevent a similar accident from occurring in the future?
PC-5: Calculate "Frequency rate & Incident rate." Calculate "Lost time case rate" (5*1 = 5 Marks)	
5	Explain the formula of "Frequency rate, Incident rate & Lost time case rate in detail.
PC-6: Calculate "DART rate" & "Severity rate" (5*1=5 Marks)	
6	<p>A company reported the following for the last year:</p> <ul style="list-style-type: none"> • Total recordable DART cases (Days Away, Restricted, or Transferred): 6 • Total lost workdays: 120 • Total hours worked: 400,000 <p>Using this data, calculate:</p> <ol style="list-style-type: none"> 1. DART Rate 2. Severity Rate
PC-7: Understand "Fault tree analysis" and "Event tree analysis. (5*1 = 5 Marks)	
7	Can you briefly explain the difference between Fault Tree Analysis and Event Tree Analysis? Also, give one example of when each method might be used in a workplace safety scenario.
PC-8: Learn the hierarchy of controls, Importance of hierarchy of control & steps in hierarchy of control (5*1 = 5 Marks)	

8	<p>Scenario: In a metal fabrication unit, workers are frequently exposed to loud noise from cutting and grinding machines. Some employees have reported early signs of hearing loss. The safety manager is considering different ways to protect the workers and reduce noise exposure.</p> <p>Question: Based on the Hierarchy of Controls, what steps should you take to control this hazard, and why is it important to follow the hierarchy from top to bottom?</p>
<p>PC-9: Understand Maslow's theory of Hierarchical Needs, Hertzberg's two-factor theory and McClelland's theory of needs (5*1 = 5 Marks)</p>	
9	<p>Can you explain Maslow's Hierarchy of Needs and give a workplace example of how each level of the hierarchy can affect employee motivation?</p>
<p>PC-10: Vroom's Theory of Expectancy, McGregor's theory X and theory Y and Alderfer's ERG theory (5*1 = 5 Marks)</p>	
10	<p>Can you explain Vroom's Expectancy Theory of Motivation and how you would apply it to encourage better performance from an underperforming employee?</p>