

# **BHARATH SEVAK SAMAJ**

**NATIONAL DEVELOPMENT AGENCY, PROMOTED BY GOVERNMENT OF INDIA  
CENTRAL BOARD OF EXAMINATIONS  
BSS NATIONAL VOCATIONAL EDUCATION MISSION**

## **ADVANCED DIPLOMA IN FIRE AND INDUSTRIAL SAFETY MANAGEMENT**

### **ELECTRICAL SAFETY & CONSTRUCTION SAFETY**

**TIME: 3 Hours**

**Marks: 100 Marks**

**Short answer questions  
(Answer any 10 questions)  
( $10 \times 02 = 20$  Marks)**

1. What are the primary electrical hazard?
2. What are the fire hazards in construction site?
3. What are the two most common paths of current flow in our body?
4. Mention the factors to be considered selection of ladder.
5. What are PPE to be used in Height work?
6. What are the advantages, disadvantages of fuse?
7. What is the difference between isolation and switching off?
8. Draw the symbol of Double Insulation.
9. Identify health effects of cement dust?
10. Identify 2 hazards associated with vehicle operations in construction site?
11. "Wet condition is more dangerous than dry condition" Justify by using Ohms law.
12. "Don't use DCP fire extinguisher during electrical fire emergency" – Justify.

**Long Answer Questions**  
**(Answer any 08 questions)**  
**(08X10=80 Marks)**

1. Explain hazards associated with construction work.
  2. Write short note on major causes of electrical fire.
  3. What are the effects of electrical shock with brief explanation?
  4. Identify components of scaffold.
  5. Identify common controls to prevent crane accident?
  6. Explain the importance of LOTO system in electrical safety.
  7. What are the important points to be considered to buy an electrical safety PPE?
  8. In order to do work in confined space, what are the procedures and documents you should insist to ensure zero accident?
  9. Write the precautions to be followed during excavation work?
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10. You are appointed as HSE officer to construction industry. Industry handles flammable materials. General Manager asked you to conduct tool box talk on fire Safety. In that situation, what topic you will give TBT to explain the safety to the workers.

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## **ADVANCED DIPLOMA IN FIRE AND INDUSTRIAL SAFETY MANAGEMENT**

### **FIRE & SAFETY ENGINEERING**

**TIME: 3 Hours**

**Marks: 100**

**10 X 1 = 10**

#### **(I) ONE MARKS**

- 1) ..... Method: Reduce the temperature of burning materials
- 2) Flammable Liquid e.g., Petrol, .....
- 3) Class B fire extinguished by FOAM Fire Extinguisher & also by .....
- 4) Provide protective clothing to protect body from .....
- 5) "PPE will eliminate the hazard" True or False :.....
- 6) Store all tools safely, Keep away from the opening or edge and secure it to avoid .....
- 7) Fall protection systems give example:.....
- 8) Check machine color code and overall machine condition like earth & .....
- 9) Before climbing to the scaffolding what will you check? ..... & have a look of overall scaffolding condition
- 10) Two hands and one foot or ..... and one hand should always be touch with ladder.

#### **(II) TWO MARKS**

**10 X 2 = 20**

- 1) What are the three sides of the fire triangle?
- 2) What are the three forms of fuel?
- 3) How will you extinguish class B fire?
- 4) How will you transport the oil drum?
- 5) What is PPE?

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- 6) What are the body protections?
- 7) What are the PPE used for chemical Handling?
- 8) If the load is heavy, how will you lift & transport?
- 9) What PPE is needed to work at height?
- 10) What is housekeeping?

## **(III) FIVE MARKS**

**5 X 5 = 25**

- 1) Identify common causes of fires in the workplace?
- 2) Excavation work is being carried out on a construction site. Identify the control measures needed to reduce the risk to workers?
- 3) Explain How to motivate employees in workplace?
- 4) Explain key components of HSE Management system?
- 5) Work permit system?

## **(IV) FIFTEEN MARKS**

**3 X 15 = 45**

- 1) Outline the precautions that should be taken when using mobile cranes.
- 2) Explain Housekeeping?
- 3) Explain scaffolding and types of scaffolding?

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## **ADVANCED DIPLOMA IN FIRE AND INDUSTRIAL SAFETY MANAGEMENT**

### **INDUSTRIAL SAFETY**

**TIME: 3 Hours**

**Marks: 100**

**10 X 1 = 10**

#### **(I) ONE MARKS**

- 1) Risk is combination of -----
- 2) Biological Hazards give examples: -----
- 3) Risk assessment is method of ..... the risk
- 4) "PPE is last level of risk" True or False: .....
- 5) Accident and near miss caused by ..... & .....
- 6) Hot work examples: .....
- 7) Excavation above 1.2 meters considered as .....
- 8) Work permit system is a ----- document
- 9) Safety policy signed by----- of the company
- 10) Lux meter used to measure-----.

#### **(II) TWO MARKS**

**10 X 2 = 20**

- 1) What are the three sides of the fire triangle?
- 2) Risk assessment means?
- 3) Identify risk control methods?
- 4) Outline ALARP?
- 5) What is accident?
- 6) Give example of workplace hazards?
- 7) What are the PPE used for working at height?
- 8) Outline hot work?
- 9) What PPE is needed to do grinding work?
- 10) What is near miss?

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## **(III) FIVE MARKS**

**5 X 5 = 25**

1. Accident happened during Vehicle reversing what are the costs of accident?
2. Define term Hazard, Risk, Near miss and Accident and give examples.
3. Identify safety precautions need to be taken to prevent vehicle accidents?
4. Identify hazards associated with the use of machinery.
5. Explain different types of PPE used in industries.

## **(IV) FIFTEEN MARKS**

**3 X 15 = 45**

- 1) Explain Accident investigation.
- 2) Explain Risk assessment & Hierarchy of risk controls.
- 3) Identify control measures to prevent electrical accidents.

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## **ADVANCED DIPLOMA IN FIRE AND INDUSTRIAL SAFETY MANAGEMENT**

### **OCCUPATIONAL HEALTH AND SAFETY**

**TIME: 3 Hours**

**Marks: 100**

**10x10=100**

#### **(I) ONE MARKS**

- 1) What are the 3R in Waste Disposal \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.
- 2) What are the 3P in First Aid \_\_\_\_\_.
- 3) Abbreviation for EEBA \_\_\_\_\_.
- 4) Colour code for Radiation Hazard \_\_\_\_\_.
- 5) Noise is measured in the unit of \_\_\_\_\_.
- 6) Who is front line of safety? \_\_\_\_\_.
- 7) JSA is a \_\_\_\_\_ step process.
- 8) Which level of height is considered as highly at potential risk \_\_\_\_ meter.
- 9) What is the code number for helmet IS\_\_\_\_\_.
- 10) "Safety officer is only responsible for safety" True or False: \_\_\_\_\_.

#### **(II) TWO MARKS**

**10 X 2 = 20**

- 1) What does "toxic" mean in relation to chemicals?
- 2) What is a "corrosive" chemical?
- 3) Define TLV?
- 4) Outline asbestos health hazards?
- 5) What is meaning of MSDS?
- 6) Give example of biological hazards?
- 7) Acute and Chronic Health hazards?
- 8) Outline biological hazard control?
- 9) Define Local exhaust ventilation?
- 10) Outline ear plug?

#### **(III) FIVE MARKS**

**5 X 5 = 25**

1. Identify four possible routes of entry of toxic substances into the body.

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2. Explain the difference between acute and chronic health effects.
3. Identify the sources of information which could be used in the assessment of risk of toxic substances.
4. Identify three forms of biological agents? Give control measures to reduce the risk of exposure to a biological agent.
5. Give the meaning of the term 'permit-to-work'. Identify three types of work that may require a permit-to-work, and give the reasons why in each case.

**(IV) FIFTEEN MARKS**

**3 X 15 = 45**

1. Outline the possible effects on health from exposure to high levels of noise & Outline noise control techniques that would benefit all workers
2. Painting & welding work is being carried out on a construction site. Identify the control measures needed to reduce the risk to workers.
3. Identify the hazards associated with the Excavation? For the hazards identified above, outline control measures that can be used to reduce the risk.