

**P. G. CERTIFICATE IN
INDUSTRIAL SAFETY / POST
GRADUATE DIPLOMA IN
INDUSTRIAL SAFETY
(PGCINDS/PGDINDS)
Term-End Examination
June, 2025**

**MIS-024 : MECHANICAL AND ELECTRICAL
SAFETY MANAGEMENT**

Time : 3 Hours

Maximum Marks : 70

Note : *Question No. 1 is compulsory. Attempt any **five** questions from the remaining (Q. Nos. 2 to 8).*

1. (A) Answer the following objective type questions : 5×2=10
 - (a) Which of the following colours is used for radiation hazards ?
 - (i) Red

- (ii) Orange
 - (iii) Green
 - (iv) Purple
- (b) Arc blast is caused by :
- (i) Poor contact within electrical wire species.
 - (ii) Radio frequency emissions from high-power transmitter.
 - (iii) Discharge of high electrical current through open air.
 - (iv) Failure of lock-out and tag-out electrical breakers.
- (c) Decibel (dB) is a unit used to measure :
- (i) Sound
 - (ii) Light
 - (iii) Frequency
 - (iv) Amplitude
- (d) MTBF stands for :
- (i) Maximum time between failures
 - (ii) Mean time between failures
 - (iii) Minimum time between failures
 - (iv) More time between failures

(e) One of the main purposes of personnel protective ground is to provide a/an impedance path for the short circuit.

- (i) High
- (ii) Low
- (iii) Smooth
- (iv) Adequate

(B) Answer the following question in short :

5×2=10

- (i) Why First Aid is needed in any organization ? Explain in brief.
- (ii) What is the importance of fuse and grounding in electrical equipments ? Discuss in brief.
- (iii) Discuss the risk factors associated with material handling.
- (iv) Explain reliability and mean time between failures (MTBF).
- (v) What are the main precautions carried out at the time of work at high voltage lines ?

2. (a) Write down the various aspects that have to be considered for hazard identification and prevention. 5
- (b) Discuss the need of job safety analysis. 5
3. (a) Explain the different categories of risks associated with Mechanical Material Handling Equipment (MMHE). 5
- (b) Write down the importance of proper training for workers before joining job works. 5
4. (a) List out the various Personal Protective Equipments (PPEs) required at the time of holding process. Explain any *one* of them. 5
- (b) Discuss various safety tips when working on transformer. 5
5. (a) Describe the steps taken to control the preliminary damage after gas leakage accident. 5
- (b) Make a checklist for safe operation in fireworks manufacturing industry. 5

6. (a) Discuss various electrical hazards at the workplace. How can it be avoided ?
5
- (b) Write down the various safety points while working with circuit breakers. 5
7. Explain the role of earth leakage protective device and earthing in electrical safety concern. Explain with a schematic diagram. 10
8. Write short notes on any *two* of the following : 5+5
- (a) CPR
- (b) Safety Laws
- (c) Anti-kick-back systems
- (d) First Aid

x x x x x