

22451

23242

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.

Marks

1. Attempt any FIVE of the following :

5 × 2 = 10

- (a) Enlist any four tools required for mechanical maintenance.
- (b) Define adhesive wear.
- (c) Enlist any four effects of accident on employer (owner) of the industry.
- (d) Give a list of any four hazardous chemicals and corresponding hazards.
- (e) Define safety audit.
- (f) Draw a format of equipment history card.
- (g) Give a list of atleast four personal protective equipments.

2. Attempt any THREE of the following :

3 × 4 = 12

- (a) Describe all stages of repair cycle.
- (b) Describe process of occurrence of wear due to corrosion.
- (c) Give measures to avoid electrical hazards in industries.
- (d) Identify care necessary for storage, handling and transportation of hazardous chemicals.



- 3. Attempt any THREE of the following :** **3 × 4 = 12**
- (a) Describe important features of TPM.
 - (b) Write preventive maintenance procedure for any small machine in workshop (e.g. power hacksaw/drilling machine)
 - (c) Identify role of lubricants in reducing wear.
 - (d) Recognize methods to control chemical hazards.
- 4. Attempt any THREE of the following :** **3 × 4 = 12**
- (a) Suggest suitable lubricant, relevant with given situations, with justification –
 - (i) Crankshaft for vehicle used in extremely hot climate like desert.
 - (ii) Crankshaft for vehicle used for heavy duty work like earth moving machine in extremely dusty environment.
 - (b) Give practical application for following lubrication systems :
 - (i) Wick (ii) Bottle
 - (iii) Pad (iv) Centralised
 - (c) Suggest suitable methods to control :
 - (i) Mechanical hazard (ii) Ergonomic hazard
 - (d) Suggest measures to be taken for class A, B, C and D type of fire.
 - (e) Select hazard identification method for thermal power plant with justification.
- 5. Attempt any TWO of the following :** **2 × 6 = 12**
- (a) Describe chemical hazard. Classify chemical hazards and their control.
 - (b) Prepare safety data sheet for :
 - (i) Chemical hazard (ii) Thermal hazard
 - (c) Describe any two risk assessment methods.
- 6. Attempt any TWO of the following :** **2 × 6 = 12**
- (a) Prepare preventive maintenance schedule for lathe machine.
 - (b) Compare between preventive maintenance and breakdown maintenance by giving practical examples.
 - (c) Assess the risk associated with use of heavy duty press in sheet metal industry.
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