22451

11920

3 Hours / 70 Marks Seat No. | | | | | | | | |

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) Preferably, write the answers in sequential order.

Marks

1. Attempt any FIVE of the following : **10**

(a) List four primary functions of the maintenance department.

(b) Define primary wear processes.

(c) State any four types of industrial hazards.

(d) State importance of fire triangle.

(e) Define safety audit.

(f) List four tools required for mechanical maintenance.

(g) Define first aid and personal protective equipments.

2. Attempt any THREE of the following : **12**

(a) Describe preventive maintenance with the help of suitable example.

(b) Describe abrasive wear.

(c) Define accident and state its causes.

(d) Describe deluge fire suppression system.

3. Attempt any THREE of the following : **12**

(a) Define TPM and state its importance.

(b) Develop equipment card and history card for mining machine.

(c) Describe splash lubrication system with neat sketch.

(d) Describe any two safety provisions in Factories Act, 1948 for health & safety.

4. Attempt any THREE of the following : **12**

(a) State relevant lubricants for the following with justification :
  (i) Crankshaft for vehicle used in cold weather.
  (ii) Bearings used in overhead cranes in machine shop.

(b) State classification of lubrication system with their applications.

(c) State two personal protective equipments in following industrial hazards :
  (i) Chemical
  (ii) Radioactive
  (iii) Thermal
  (iv) Electrical

(d) Describe various classes of fires.

(e) Explain the application of hazard identification methods.

5. Attempt any TWO of the following : **12**

(a) Describe any two fire fighting system with applications.

(b) Sketch Safety Data Sheet (SDS) for the following :
  (i) Ammonia
  (ii) Chlorine

(c) Describe FMEA and FTA in risk assessment.

6. Attempt any TWO of the following : **12**

(a) Explain following equipments in electrical maintenance :
  (i) multimeter
  (ii) fuses
  (iii) circuit breakers

(b) Describe repair cycle and illustrate its use with suitable example.

(c) Explain event tree analysis and illustrate its use with suitable example.