

Scheme - I

Sample Question Paper

Program Name : Diploma in Production Engineering / Production Technology
Program Code : PG / PT
Semester : Fourth
Course Title : Plant Engineering and Safety Management
Marks : 70

22451

Time: 3 Hrs.

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

Q.1) Attempt any FIVE of the following.

10 Marks

- a) Enlist any four primary functions of maintenance department.
- b) Give a list of primary wear processes.
- c) State any four types of industrial hazards.
- d) State importance of fire triangle with help of diagram.
- e) Define safety audit.
- f) Enlist any four tools required for mechanical maintenance.
- g) State two uses of any two personal protective equipments.

Q.2) Attempt any THREE of the following.

12 Marks

- a) State the need of preventive maintenance with the help of two examples.
- b) How abrasive wear occurs in mating parts?
- c) How safety policies can be useful in controlling accidents?
- d) Describe any one special fire suppression system.

Q.3) Attempt any THREE of the following.

12 Marks

- a) Define TPM and state it's any two important features.
- b) Develop equipment card and history card for lathe machine.
- c) Describe splash lubrication system with a neat sketch.
- d) Describe any two important safety provisions in Factories Act,1948.

Q.4) Attempt any THREE of the following.

12 Marks

- a) Suggest the relevant lubricant with justification for
 - (i) Crankshaft for vehicle used in extremely cold weather
 - (ii) Milling machine used in normal weather.
- b) Give practical application of following lubrication systems: (i) Wick (ii) Sump
 - (iii) Centralised (iv) Pad
- c) Suggest personal protective equipments in following industrial hazards.
 - (i) Chemical (ii) Electrical (iii) Thermal (iv) Radioactive
- d) Prepare preventive maintenance plan for storage and handling of ammonia.
- e) Select hazard identification method for electricity distribution substation with justification.

Q.5) Attempt any TWO of the following.

12 Marks

- a) Describe various classes of fire with suitable examples and type of fire extinguishers used accordingly.
- b) Prepare Safety Data Sheet (SDS) for : (i) Fire hazard (ii) Chemical hazard.
- c) Describe following risk assessment methods: (i) FMEA (ii) FTA

Q.6) Attempt any TWO of the following.

12 Marks

- a) Select tools for electrical maintenance of shop floor of medium scale manufacturing company.
- b) Suggest a suitable preventive maintenance plan for any one plant utility.
- c) Assess the risk associated with use of overhead cranes and prepare event tree analysis.

Scheme - I

Sample Test Paper - I

Program Name : Diploma in Production Engineering / Production Technology
Program Code : PG / PT
Semester : Fourth
Course Title : Plant Engineering and Safety Management
Marks : 20

22451

Time: 1 Hour

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR.

08 Marks

- a) Define preventive maintenance
- b) Give any two benefits of TPM.
- c) List any four tools required for electrical maintenance.
- d) Define : (i) Viscosity Index (ii) Flash Point
- e) List any four primary wear processes.
- f) State any four plant utilities.

Q.2 Attempt any THREE.

12 Marks

- a) Prepare repair cycle for lathe machine
- b) How TPM can be used for pump house.
- c) Why equipment history cards are necessary?
- d) How adhesive wear occurs in mating parts?
- e) Classify lubricants
- f) Compare Sump Lubrication System with Splash .

Scheme – I

Sample Test Paper - II

Program Name : Diploma in Production Engineering / Production Technology
Program Code : PG / PT
Semester : Fourth
Course Title : Plant Engineering and Safety Management
Marks : 20

22451

Time: 1 Hour

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR.

08 Marks

- a) State any four health provisions in Factories Act,1948.
- b) State causes of fire hazards.
- c) Define HAZOP.
- d) State any four prohibited and hazardous chemicals in India.
- e) What are components of industrial firefighting systems?
- f) State importance of First Aid

Q.2 Attempt any THREE.

12 Marks

- a) What is need of Safety audit?
- b) Describe i) Ergonomic Hazard (ii) Radioactive Hazard
- c) What is the function of fire suppression systems? Explain CO₂ system.
- d) How the hazardous chemicals are stored and transported?
- e) Describe HAZAN
- f) Describe effects of accident on: (i)employer (ii) employee