



17531

15116

3 Hours / 100 Marks

Seat No.

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- 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.*

Marks

- 1. A) Attempt any three :** **(4×3=12)**
- a) Enlist methods of purification of water.
 - b) State the importance of plant maintenance.
 - c) State any four objectives of TPM.
 - d) State various types of lubricant.
- B) Attempt any one :** **(6×1=6)**
- a) Describe working of industrial ventilation system with neat sketch.
 - b) Describe water distribution system with neat sketch.
- 2. Attempt any four :** **(4×4=16)**
- a) Compare preventive maintenance and breakdown maintenance.
 - b) Explain predictive maintenance with example.
 - c) Explain repair cycle with suitable example.
 - d) State reasons of breakdown of machine tools.
 - e) Describe basic system of TPM.
- 3. Attempt any four :** **(4×4=16)**
- a) What is TPM ? State benefits of TPM.
 - b) Describe any two wear process.
 - c) State the contents of maintenance manual.
 - d) List out various maintenance tools.
 - e) Write applications of TPM.

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Marks

4. A) Attempt **any three** :

(4×3=12)

- a) Describe important features of TPM.
- b) Explain necessary equipment for electrical maintenance in brief.
- c) Write causes and preventive measures for electric fire.
- d) List out causes and effects of accident.

B) Attempt **any one** :

(6×1=6)

- a) Describe the function and applications of the following :
 - i) Multimeter
 - ii) Ammeter
 - iii) Tubes
- b) Describe wear behaviour due to primary wear process.

5. Attempt **any four** :

(4×4=16)

- a) Describe overload relays and voltmeter.
- b) Describe interlocking system for parallel shafts with neat sketch.
- c) List out personnel protective equipment. Explain any one.
- d) Explain importance of lubricant.
- e) Describe any one method of earthing.

6. Attempt **any two** :

(8×2=16)

- a) Describe with neat sketch electric power distribution system.
 - b) Write stepwise procedure of preventive maintenance with one example.
 - c) Describe travel control by limit switches with neat sketch.
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