

Maintenance of Thermal Power Plant**Time : Three Hours****Maximum Marks : 70****Note :** i) Attempt any five questions.

ii) Different parts of the same question should be attempted in continuation.

1. a) What is meant by Spare Parts Management? How is spare parts inventory controlled? How can spare parts management be used to improve operational reliability and plant capacity? Explain.
b) What actions are performed in maintenance planning and scheduling? Also explain emergency maintenance procedure.
2. a) What is meant by condition monitoring? Name the main condition monitoring techniques applied in industrial sectors, and illustrate the use of any one technique with the help of an example.
b) What is meant by vibration and noise signature? How is it used as a diagnostic tool for condition assessment of rotating equipment? Explain.
3. a) What is a lubricant? What are the characteristics possessed by a good lubricant? Describe the key function performed by lubricants.
b) What are non-conventional lubricants? Under what situations are these used? State their areas of application, along with the reasons for using non-conventional lubricants.
4. a) What is meant by failure of bearings? What are the different causes of bearing failure and their causes? Explain any two of them.
b) What is meant by failure of gears? How does one recognize that a gear has failed? What are the causes of failure and how can they be avoided?
5. a) What is meant by maintenance scheduling? What is the effect of leaks in steam turbine condensers? How it is detected and prevented?
b) What are the causes of erosion of turbine blades? Explain the phenomenon of erosion of blades and how can it be prevented?
6. a) What is meant by maintenance management? Name the various maintenance strategies and explain any two of them.
b) What is meant by Diagnostic Maintenance? What monitoring and diagnostic strategies are used for industrial predictive maintenance?
7. a) What is meant by lubrication? What are the different types of lubricants? Also explain the different regimes of lubrication.
b) What is meant by embrittlement of metals? What are the various mechanisms of embrittlement? Name and explain any two of them.
8. Write short notes on:
 - a) Organization of maintenance department
 - b) Failure due to faulty heat treatment
 - c) Predictive and preventive maintenance of steam turbine
 - d) On load and off load cleaning of condenser tubes.