Roll No .....

MMTP - 205

M.E./M.Tech. II Semester

Examination, December 2015

Maintenance of Thermal Power Plant

Time : Three Hours

Maximum Marks :70

Note : i) Attempt any five questions.
ii) All questions carry equal marks.
iii) Different parts of the same question should be attempted in continuation.

1. a) What is meant by Maintenance Management? Name the various maintenance strategies and explain any two of them.
   b) Explain the organization structure of maintenance department. How are human consideration incorporated in the organization? Explain.

2. a) What is meant by diagnostic maintenance? What monitoring and diagnostic strategies are used for industrial predictive maintenance?
   b) What is meant by signature analysis? How is signature analysis used in predictive maintenance? Explain.

3. a) What is meant by lubrication? What are the different types of lubricants? Also explain the different regimes of lubrication.
   b) What is hydrodynamic lubrication? Explain the process with respect to a shaft rotating in a bearing.

4. a) What is meant by failure? What are the different mechanisms of failure? What are the types of expected failures due to environmental effects?
   b) What is meant by embrittlement of metals? What are the various mechanisms of embrittlement? Name and explain any two of them.

5. a) Why is maintenance of plant and equipment important? What should be done and what should NOT be done for good plant and equipment maintenance? Explain.
   b) How would you prepare a maintenance schedule of a cooling tower? What precautions should be taken before starting maintenance of machinery?

6. a) What action are performed in maintenance planning and scheduling? Also explain emergency maintenance procedure.
   b) What is meant by vibration and noise signature? How is it used as a diagnostic tool for condition assessment of rotating equipment? Explain.

7. a) What are non-conventional lubricants? Under what situation are these used? State their areas of application, along with reasons for using non-conventional lubricants?
   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?

8. Write short notes on :
   i) Thermography
   ii) Failure due to creep
   iii) On-load and Off-load cleaning of condenser tubes
   iv) Erosion of turbine blades and its prevention

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