



B.E./B.Tech (Full-Time) DEGREE END SEMESTER EXAMINATION, APRIL/MAY 2012
Mechanical Engineering Branch
Eighth Semester- REGULATIONS 2004

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ME 482 – POWER PLANT ENGINEERING

Time : Three hours

Maximum : 100 marks

Answer ALL questions

Part A – (10 × 2 = 20 marks)

1. What do you mean by 'Fluidised bed boilers' (FBD)?
2. Mention the advantages of combined power cycle.
3. What are the different types of furnaces in which coal may be burnt?
4. Mention the few application area of cooling towers.
5. What is breeding in nuclear reactor?
6. What is the main purpose of reservoir and dam?
7. List the different types torque transducer.
8. What are the advantages of LVDT?
9. What are the two basic parameters to decide while planning a power plant?
10. Name the different types of solar collectors used for power generation.

Part B – (5 × 16 = 80 marks)

11.a) What is OTEC? How does it work? Discuss the working method of all types of OTEC system.

12.a) Explain with a neat sketch of diesel power plant. Highlight the merits and demerits of diesel power plant.

(Or)

b) Write short notes on the following

- i) Reheater and Superheater
- ii) Effect of increase in boiler pressure
- iii) Steam rate and heat rate
- iv) Effect of decrease in condenser pressure

(4 × 4)

13.a) Explain the working principle of different types of mechanical stokers.

(Or)

b) With neat sketch explain the working principle of (i) Surface condenser
(ii) Electrostatic precipitator (ESP)

(8 + 8)

14.a) Write short notes on the following

- v) Nuclear fission chain reaction process
- vi) Liquid metal fast breeder reactor (LMFBR)
- vii) CANDU reactor
- viii) Advantages of fusion power plant

(4 × 4)

(Or)

- b) (i) Explain with a neat sketch of pumped storage plant. **(8)**
(ii) Explain with a neat sketch of hydrological cycle. **(8)**

15.a) Write short notes on the following

- i) Piezo electric effect
- ii) Strain gauge pressure transducer
- iii) Seeback effect
- iv) Liquid and gas flow meters **(4 x 4)**

(Or)

- b) (i) explain the load factor on the cost of electricity generated **(6)**
(ii) Explain the principle of economic scheduling **(10)**