

**B.E. (FULL TIME) DEGREE END SEMESTER EXAMINATIONS - APRIL / MAY 2011****ELECTRICAL AND ELECTRONICS ENGINEERING - II SEMESTER - REGULATION 2008****ME 9153 – POWER PLANT ENGINEERING(3 credits)**

Time : 3 Hours

Max. Marks : 100

**ANSWER ALL QUESTIONS****PART – A ( 10 X 2 = 20 Marks)**

1. Mention the four thermodynamic processes involved in Diesel cycle.
2. List out the advantages of superheated steam in a boiler.
3. State the functions of draft tube in a Hydro Electric Power Plant.
4. Compare impulse and reaction turbine with respect the water turbines.
5. Define isotopes with respect to Nuclear Energy.
6. State the Radio active law of disintegration.
7. How do you classify the gas turbines?
8. Mention the applications of gas turbine.
9. List out the Non-conventional sources of energy.
10. What do you understand the term "TIDES" in a tidal power plant.

**PART – B ( 5 X 16 = 80 Marks)**

- 11 Draw a neat "Layout of Hydro-Electric Power Plant" and indicate the various components with direction of flow on the sketch and explain each component.
- 12.a) Draw a neat "Layout of steam power plant" and indicate the various components on the sketch, with the directions of flow.
 

(OR)

  - b) i) Draw p-v and T-s diagram of otto cycle. (4)
  - ii) List out boiler mountings and accessories. (3)
  - iii) Explain with a sketch the "Deareator" in a steam power plant. (9)
- 13.a) i) List out the classification of nuclear reactors. (5)
- ii) Mention the desirable properties of coolant. (6)
- iii) Explain nuclear fission. (5)

(OR)

  - b) i) Draw a neat "Layout of pressurized water reactor nuclear power plant" and indicate the components in the sketch and explain its working. (12)
  - ii) Mention the merits of nuclear power plant. (4)

- 14.a) i) Sketch the p-v, T-s and h- diagram and its operations of simple open cycle gas turbine (6)
- ii) Draw a schematic diagram of simple open cycle gas turbine and indicate the various parts on the sketch and explain its working. (10)

(OR)

  - b) i) Explain the ways and means of improving the efficiency and the specific output of simple open cycle gas turbine. (8)
  - ii) Draw a schematic diagram of a gas turbine with inter cooling, heat exchange and reheating and indicate the various parts with direction of flow. Also draw p-v and T-s diagram for the above. (8)

- 15.a) i) Draw a neat "Layout of low temperature solar power plant using butane boiler" and indicate the components with direction of flow and explain its working. (10)
- ii) List out the advantages of Geothermal Power Plant. (4)
- iii) What do you mean by OTEC? (2)

(OR)

- b) i) Explain with a sketch the Magneto-Hydro dynamic power plant. (4)
- ii) Explain with a sketch the Tidel power plant. (6)
- iii) Draw a neat diagram of Fuel cell and explain its working. (6)