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**B.E / B.Tech ( Full Time ) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2013**

**ELECTRICAL AND ELECTRONICS ENGINEERING**

**II SEMESTER**

**ME 9153- POWER PLANT ENGINEERING  
(R-2008)**

TIME: 3 HRS

INSTRUCTIONS:

MAX. MARKS: 100

1. ANSWER ALL QUESTIONS
2. USE OF APPROVED DATA BOOKS ARE PERMITTED
3. ASSUME MISSING DATA SUITABLY

**PART - A**

(10 x 2 = 20)

1. What do you mean by weathering of coal? What type of storage is recommended to avoid weathering of coal?
2. Why Balanced draught system is preferred in Thermal power plant?
3. How are Hydel power plants classified based on head?
4. Distinguish between a base load power plant and a peak load power plant.
5. Briefly discuss the advantages of PWR over BWR in Nuclear power plants.
6. What is meant by Doubling time in a breeder reactor?
7. What do you mean by Cross compounding in gas turbines? Mention its advantages .
8. What do you mean by Intercooling in Gas Turbines?
9. Distinguish between Solar-PV and Solar Thermal systems.
10. What do you mean by Geo Thermal Power?

**PART - B**

(5 x 16 = 80)

11. Draw a neat sketch of Thermal power plant layout and describe the various circuits.
- 12.(a) Explain with a neat sketch the lay out of Hydro electric power plant.

(OR)

(b) How are Hydel Power Plants classified. Compare the Load Vs Efficiency curves of Hydro and Thermal Power plants. Explain how the Load factor could be improved in a pumped storage plant coupled to a Thermal Power plant.

13.(a)(i.) List down the Nuclear power stations in India and enumerate their installed capacities.

(6)

(ii) With a Schematic diagram explain the working of Direct and indirect circuit gas cooled Nuclear Reactors.

(10)

(OR)

(b)(i) How are Nuclear reactors classified? What are the various components and their functional requirements of a Nuclear reactor.

(10)

(ii) Explain the CANDU type nuclear reactor with a simple sketch.

(6)

14.(a) Explain the Brayton Cycle and the methods of Reheating and Regeneration to improve the Thermal efficiency of the cycle with neat sketches.

(OR)

(b) With a neat sketch explain the layout of a Diesel Engine Power Plant. Explain its advantages and disadvantages as compared to a Steam Power plant.

15. (a) Discuss the scope of using Solar Energy for Power generation in India. Highlight the limitations also.

(OR)

(b) What are all the avenues for Thermo electric power generation. Discuss how it could be used for power generation from waste heat. How is it different from Thermionic Power generation?