

**II B.Tech II Semester Supplementary Examinations, April/May 2005**  
**POWER SYSTEMS-I**  
**(Electrical & Electronic Engineering)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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1. Write short notes on:-
  - (a) Precipitation
  - (b) Evaporation
  - (c) Storage
  - (d) Pondage
2. Describe the schematic arrangement of a thermal power station and explain the function of each briefly.
3. Explain the functions of Economizer and superheater in a thermal power plant with neat diagrams.
4.
  - (a) Mention the advantages and disadvantages of Nuclear power plants.
  - (b) Name the different types of radiants. Explain any two of them in detail?
5. Explain the following with neat diagrams:
  - (a) AC 3 phase 3 wire distribution system
  - (b) AC 3 phase 4 wire system
6.
  - (a) What is distribution system? How will you classify it?
  - (b) Explain the following:
    - i. Feeder
    - ii. Distributor
    - iii. Service mains
7.
  - (a) What do you understand by the load curve? What information is conveyed by a load curve? A consumer has a maximum demand of 200 kW at 40 % load factor. If the tariff is Rs.1000 per kW of maximum demand plus Rs.2 per kWh, find the overall cost per kWh.
  - (b) Define the following terms:
    - i. Connected load
    - ii. Maximum demand
    - iii. Demand factor
    - iv. Load factor.

8. (a) Explain the terms interest and depreciation as applied to economics of power generation.
- (b) A generating station is to supply four regions of load whose peak loads are 10 MW, 5 MW, 8 MW and 7 MW. The diversity factor at the station is 1.5 and the average annual load factor is 60%. Calculate:
- The maximum demand on the station.
  - Annual energy supplied by the station. Suggest the installed capacity and the number of units.

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