B.E. Sixth Semester (Electrical Engineering (Electronics & Power)) (C.B.S.)

Power Station Practice

P. Pages : 2 **NKT/KS/17/7389**

Time : Three Hours * 0 4 8 6 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.
10. Diagrams and chemical equations should be given whenever necessary.
11. Illustrate your answers whenever necessary with the help of neat sketches.
12. Use of non programmable calculator is permitted.
13. Use graph paper if required.

1. a) Enumerate various sources of electrical power. Give three most commenly used sources in India with their approximate share. **6**

b) List different factors concerned with power Generation sector. Define five most important factors from the above list. **7**

OR

2. a) A proposed generating station is expected to have a daily load cycle as under:- **8**

Time (Hrs)	Load (MW)
06-08	30
08-12	60
12-18	75
18-22	90
22-00	30
00-06	15

Generating sets having capacity 10MW, 15MW, 30MW, & 60MW, are available from which any suitable combination can be chosen:-

i) Draw daily load curve
ii) Find load factor.
iii) Choose size & number of sets with justification.
iv) Prepare operation schedule.

b) Even if max. demand & load factor of two systems are same, their load duration curve may not be same. Justify. **5**

3. a) Show the layout of thermal power plant with following cycles:- **7**

i) Flue gas cycles. ii) Cooling water cycle.
iii) Steam cycle.

b) Explain Ash handling plant. **6**

OR

4. a) Explain the site selection criteria for thermal power plant. **7**

b) State advantages and disadvantages of the pulverized coal in power station. **6**

5. a) Define & Explain the importance of:- **7**
i) Hydrograph. ii) Mass curve.
iii) Flow duration curve.

b) Explain three different ways of classification of hydroelectric plants. **7**

OR

6. a) A proposed hydro power plant with an effective head of 125 m has a catchment area of 600 Sq. Km, in which average rainfall is 150 cm per annum. only 65% of water is available for power generation. Determine the average power that can be generated throughout the year if the efficiency of turbine – generator is 75%. **7**

b) Discuss turbines in power plants. **7**

7 a) Write short notes on:- **6**
i) Moderator. ii) Coolant.

b) Explain the term breeding with a suitable example. **2**

c) Explain the fast breeder reactor with neat diagram. **5**

OR

8. a) Explain with neat & labelled diagram, the working of nuclear reactor and show different components. **7**

b) What is meant by "Atomic Waste" and how is it disposed OFF? **6**

9. a) Explain working of a automatic voltage regulator with a suitable block diagram. **7**

b) Define tariff. Explain various tariffs. **7**

OR

10. a) Daily load of an industry is 200 kw for first one hour, 150 kw for next 7 hours, 50 kw for next 8 hours and 1 kw for the remaining time. If tariff is Rs. 100 per Kw of max. demand per annum plus 5 Paise per kwh, find the electricity bill for 365 days. **7**

b) Explain working of brushless thyristor excitation system in brief. **7**

11. a) Explain co-generation in detail. **7**

b) Explain advantages and constraints of captive generation. **6**

OR

12. a) Explain Gas turbine system of Co-generation technologies. **7**

b) Explain different types of captive power plants. **6**

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