

2056
B.E. (Electrical and Electronics Engineering)
Eighth Semester
OE-EE-803: Electrical Power Generation

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit. Assume any missing data.

x-x-x

1. (a) Differentiate between capacity factor and utilisation factor.
(b) Define tariff and its objectives.
(c) What is depreciation of power plant? How is it important?
(d) Write advantages of combined operation of power plants.
(e) What is spinning reserve? Explain. (5x2)

UNIT - I

2. (a) How demand factor, load factor and diversity factor affect the fixation of tariffs in power system?
(b) What do you mean by CEA? What are its functions? (5,5)

3. (a) The load curve of an electrical system is linear:

Time	12	2	5	8	5	6	9	12
Load (MW)	20	10	10	50	50	100	100	20

- Plot chronological load curve and load duration curve.
- Plot energy load curve and mass curve
- Find load factor

- (b) Write importance of load forecasting. Explain long term forecasting. (7,3)
4. (a) Write different reasons of low power factor. What are its effects on power system?
(b) Explain how power factor improvement is done using shunt capacitor? Find most economic power factor when kW demand is constant. (3,7)

P.T.O.

(2)

UNIT - II

5. (a) Explain various components of operating cost of power plant. How is operating cost calculated?

- (b) Determine the generation cost per unit of energy from the following data:

Installed capacity: 120 MW

Capital cost of plant: Rs. 40000 per kW

Interest and depreciation: 15%

Fuel consumption: 0.64 kg/kWh

Fuel cost: Rs. 1500/1000 kg

Salaries, wages and other costs: Rs. 500 lakhs/ annum

Peak load: 100 MW

Load factor: 60%

(5,5)

6. (a) Explain various methods of hydro-thermal scheduling.

- (b) Discuss long term operating aspects of hydro and thermal plants.

(5,5)

7. (a) What considerations govern the selection of plant sizes?

- (b) How does plant location affect the reliability of electric supply?

(5,5)

x-x-x