Exam.Code:0938
Sub. Code: 33800

2015

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. I which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

a) Explain base load and peak load plants.

b) Give reasons why the utilization factor of a plant may be more than 1.

c) How is straight line depreciation different from sinking fund depreciation?

d) How can voltage regulation be improved by installation of capacitors?

e) Discuss the methods available for short term hydrothermal coordination. (5x2)

UNIT - I

II. The load curve of an electrical system is linear with the following values at different times of the day:-

Time	12	5am	9	6	8pm	10	12
Load (MW)	50	50	100	100	150	80	50

Plot chronological load curve. Find the energy supplied by the system in one day and the system daily load factor. (10)

III. a) Describe the development of power in India. Discuss the present organization of power sector in India.

b) Explain the single line diagram of a thermal power plans. (2x5)

IV. a) Find the power factor of a station supplying the following loads:

250 kW at unity power factor, 1500 kW at 0.9 lagging, 700 kW at 0.9 leading, 1000 kW at 0.8 lagging. Find the load at unity power factor which can be supplied by this sub-station.

b) Discuss the different types of tariffs used for charging the consumers of electric energy. (2x5)

P.T.O.

UNIT - II

V. The annual working cost of a power station is represented by the formula Rs. (a + bkW + c kWh) where the various terms have their usual meaning. Determine the values of a, b and c for a 60 MW station operating at annual load factor of 50% from data:

a) capital cost of building and equipment is Rs. $5x10^6$.

b) The annual cost fuel, oil, taxation and wages of operating staff is Rs. 9,00,000.

c) The interest and depreciation on building and equipment are 10% per annum.

d) Annual cost of organization and interest on cost of site is Rs. 5,00,000. (10)

VI. a) Discuss the capitalized cost methods as used in the selection and location of power plants.

b) What do you mean by depreciation reserve? Why is it necessary to maintain it? Discuss the methods to calculate depreciation charges. (2x5)

VII. a) Derive the co-ordination equation for the optimal scheduling of Hydro-thermal interconnected power systems.

b) Discuss different methods used for computing the generation schedules in a combined hydro thermal system. (2x5)

x-x-x