B.Tech.(Sem.-5th)
Generation & Economics of Electric Power
Subject Code: BTEE 503A

Time : 03 Hours

Maximum Marks: 60

Instruction to Candidates:
1) Section A is compulsory
2) Attempt five questions from section B.

Section-A   [Marks: 02 each]

Q1

    a.   What are the factors on which generating cost depends?

    b.   Classify the different types of tariffs.

    c.   Enlist the factors that govern the site selection of plant.

    d.   What is the need of improving power factor?

    e.   What are the technologies used in co-generation?

    f.   Distinguish between operating reserve & spinning reserve.

    g.   What are the impacts of pollution due to power generation?

    h.   Define load factor & peak diversity factor.

    i.   Name the various stack emissions.

    J   A generating station has a maximum demand of 450 MW. The annual load factor is 45% and capacity factor is 40%. Find the reserve capacity of the plant.

Section –B   [Marks: 08 each]

Q2(a) Discuss the organization of power sector in India.   Or

    (b) Classify the power plants according to base and peak load.

Q3(a) The annual load duration curve of a small hydro plant shows 438×10^4 kWh of energy during the year. It is a peak load plant with 20% annual load factor find the station capacity. If the plant capacity factor is 15%. Find the reserve

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capacity of the plant.   Or

(b) Explain the different types of loads with their chronological curves.

Q4(a) What do you understand by fixed and operating costs of power plant

and how cost of energy is effected by load factor?   Or

(b) Explain the cogeneration and its technologies.

Q5 (a) A steam power plant is erected at a cost of Rs.2×10^8. Assuming a salvage value

of 15%, a useful life of 25 years and interest rate 8%, find depreciation reserve

annually by sinking fund method and straight line method.   Or

(b) Explain the Equal increment cost criteria for optimum scheduling in power plants.

Q6 Write short notes on any two: 1. Waste disposal of nuclear plants 2. Scheduling &

its methods 3. Coordination equations and its solution.

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