U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

September / October 2023 Supplementary Examinations

Programme: B.E. **Semester: VII**
Branch: Institutional Elective **Duration: 3 hrs.**
Course Code: 19EE7OE2EC **Max Marks: 100**
Course: Electrical Power & Energy Conservation

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

1	a)	Give an outline on power crisis in India.	**08**
	b)	Explain the key points of electric energy growth in india.	**06**
	c)	Define electrical energy sources. Explain conventional and non-conventional energy sources.	**06**

UNIT - II

2	a)	Define the following: i) Group Diversity Factor ii) Maximum demand iii) Plant Capacity Factor.	**06**
	b)	Give an outline on types of typical load curves for various load sectors on a system.	**08**
	c)	A power station is to supply three region of load whose peak loads are 20MW, 15MW,25MW. The annual load factor is 50%. And diversity factor of the load at the station is 1.5. Determine max demand on station, installed capacity suggesting no.of units, annual energy supplied.	**06**

OR

3	a)	List the objectives of tariff.	**06**
	b)	The max.[peak] load on thermal power plant of 60MW is 50MW at an annual load factor of 50%. The loads having max. demands of 25MW, 20MW, 8MWare connected to power station. Determine (a) Avg. load on power station (b) Energy Generated per year (c) Demand Factor (d) Diversity factor.	**06**
	c)	Write the general form tariff form. Explain the types of tariff's.	**08**

UNIT - III

4	a)	Explain in detail energy conservation planning.	**06**
	b)	Give an outline on energy conservation in i) Chemical Industry ii) Cement industry	**08**
	c)	Elaborate energy conservation in household and commercial sectors.	**06**

UNIT - IV

5	a)	What is the aim of energy audit? Explain energy flow diagram in a plant or a system.	**06**
	b)	Elaborate the instruments used for energy audit for i)Lighting measurements ii) Chemical measurements iii) Mechanical measurements.	**08**
	c)	Explain the duties of energy management team.	**06**

OR

6	a)	Elaborate with the block diagram the energy audit of compressed air system.	**06**
	b)	Give an outline on energy audit of buildings.	**06**
	c)	Explain energy audit of heating, ventilation and air conditioning system. List the heat recovery systems and explain any two.	**08**

UNIT - V

7	a)	Explain tariff options for DSM	**07**
	b)	Describe the application of load control as applied to DSM.	**08**
	c)	Summarize the evolution and scope of DSM concept.	**05**

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