CBCS SCHEME

USN | | | | | | | | | | BEE405A

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2025
Electrical Power Generation and Economics

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Define the terms with graph : i) Hydrograph ii) Flow duration curve iii) Mass curve	06	L1	CO1
	b.	Explain with neat sketch the working of hydroelectric power plant station and explain the functions of each components in it.	10	L2	CO1
	c.	List out the merits and demerits of Hydro power plant.	04	L1	CO1
		OR			
Q.2	a.	Discuss with a schematic diagram. i) Low head hydro power plant ii) Medium head power plant iii) High head hydro power plant iv) Pumped storage hydro power plant.	12	L2	CO1
	b.	With a neat sketch, explain the function of governor used to control the speed of hydraulic turbine.	08	L2	CO1
		Module – 2			
Q.3	a.	With a neat sketch, explain overfeed and underfeed stokers.	07	L2	CO2
	b.	Explain the working of steam power plant with neat diagram.	07	L2	CO2
	c.	Discuss the advantages and disadvantages of diesel power plant.	06	L2	CO2
		OR			
Q.4	a.	Draw a layout of diesel power plant and explain its operation with its important components.	08	L2	CO2
	b.	Discuss in brief the methods of improving thermal efficiency of gas turbine power plant.	08	L2	CO2
	c.	With a flow diagram, explain the fuel handling system.	04	L2	CO2
		Module – 3			
Q.5	a.	Draw a neat diagram of pressurized water reactor and explain its advantages and disadvantages.	08	L2	CO3
	b.	Write briefly about Nuclear Waste Disposal.	06	L2	CO3
	c.	What is nuclear reactor? How are nuclear reactor classified?	06	L3	CO3
		OR			
Q.6	a.	With a neat sketch, explain main parts of Nuclear Reactor.	10	L2	CO3
	b.	Explain the construction and working of 'Gas-cooled reactor'. What are its advantages and disadvantages.	10	L2	CO3

		Module – 4			
Q.7	a.	Draw the line diagram of 66/11 KV substation.	06	L3	CO4
	b.	Explain resonant grounding with a neat diagram and also list the advantages and disadvantages.	08	L2	CO4
	c.	Define substation and mention different types of substation.	06	L1	CO4
		OR			
Q.8	a.	Explain Earthing transformer with neat diagram.	06	L2	CO4
	b.	Draw a neat single bus bar system and explain it.	08	L2	CO4
	c.	Write short notes on : i) Resistance grounding ii) Reactance grounding	06	L2	CO4
		Module – 5			
Q.9	a.	Define Tariff. Explain different types of tariffs. (Any two type)	06	L2	CO5
	b.	Explain the main disadvantages and causes of poor power factor.	06	L2	CO5
	c.	Discuss the measures by which low power factor can be avoided.	08	L2	CO5
		OR			
Q.10	a.	Define the following terms applied to power system. i) Load factor ii) Demand factor iii) Plant capacity factor	06	L1	CO5
	b.	An industrial undertaking has connected load of 200KW. The maximum demand is 150KW. On average each machine works for 70% of time. Find yearly expenditure on electricity if the tariff is Rs. 3000 + Rs. 700 per KW of maximum demand per year + Rs. 0.60 per KWh.	08	L4	CO5
	c.	Explain the concept of load sharing and choice of size and number of generating plants.	06	L2	CO5

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