

CBCS SCHEME

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BEE405A

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2024 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.	Explain the general arrangement and operation of hydro – electric power plant.	10	L1	CO1
	b.	Mention the factors considered for the site selection of hydro electric power plant.	6	L2	CO1
	c.	Define : i) Flow duration curve ii) Mass curve.	4	L2	CO1
OR					
Q.2	a.	Classify Hydro electric power plant based on : i) Water flow ii) Head iii) Load.	6	L2	CO1
	b.	Discuss with neat diagram the working of pumped storage power plant.	6	L2	CO1
	c.	Explain with neat sketch the working of Francis Turbine.	8	L1	CO1
Module – 2					
Q.3	a.	Draw Schematic layout of typical thermal power plant and explain function of various components.	10	L3	CO2
	b.	Explain with neat sketch the working of Electrostatic precipitator used for Dust Collection.	6	L1	CO2
	c.	Discuss the Advantages and Disadvantages of thermal power plant.	4	L2	CO2
OR					
Q.4	a.	With neat block diagram, discuss the operation of open cycle gas turbine plant.	6	L2	CO2
	b.	What are the points to be considered for the site selection of Diesel power plant?	6	L1	CO2
	c.	Describe briefly the main components of Diesel electric power plant.	8	L3	CO2
Module – 3					
Q.5	a.	Draw the Schematic diagram of nuclear power station and discuss its operation.	10	L3	CO3
	b.	What are the merits and demerits of nuclear power plant?	6	L1	CO2
	c.	What are the Nuclear fuels? Discuss.	4	L1	CO2

OR					
Q.6	a.	Describe the construction and working of pressurized water reactor.	8	L2	CO3
	b.	Explain the necessity of shielding in nuclear reactors.	6	L1	CO3
	c.	Explain the methods of nuclear waste Disposal.	6	L1	CO3
Module – 4					
Q.7	a.	How are substations classified? Discuss about Indoor and outdoor substations.	10	L2	CO4
	b.	Write short notes on : i) Bus Bars ii) High voltages circuit Breaker iii) Current transformers iv) Lighting Arrester v) Control panels	10	L2	CO4
OR					
Q.8	a.	With the help of neat diagram, explain : i) Single bus bar with sectionalization ii) Duplicate Bus bar arrangement	10	L2	CO4
	b.	Write short notes on : i) Resonant grounding ii) Earthing transformer iii) Neutral grounding	10	L3	CO4
Module – 5					
Q.9	a.	Explain the following : i) Load factor ii) Plant capacity factor iii) Plant use factor iv) Demand factor v) Average load.	10	L1	CO5
	b.	A generating station has a maximum demand of 25MW, a load factor 60%, a plant capacity factor of 50% and plant use factor of 72%. Find : i) The reserve capacity of plant ii) The daily energy produced	5	L3	CO5
	c.	Discuss about fixed, semi fixed, and running or operating cost.	5	L2	CO5
OR					
Q.10	a.	Define Tariff. Explain i) Block rate tariff ii) Two part tariff iii) KVA max demand tariff iv) Flat rate tariff	10	L1,2	CO5
	b.	Define power factor. What are the effects of low power factor and methods of improving power factor?	10	L1,2	CO5

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