

Model Question Paper-1 with effect from 2019-20 (CBCS Scheme)

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Fourth Semester B.E. Degree Examination Power Generation And Economics

TIME: 03 Hours

Max. Marks: 100

Note: Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.

Module -1			*Bloom's Taxonomy Level	Marks
Q.01	a	Explain the factors to be considered for the selection of site for a hydroelectric power plant	L2	06
	b	Explain the classification of hydro power plants.	L2	06
	c	Describe 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	L1	08
OR				
Q.02	a	Explain the hydrological cycle with a neat schematic diagram.	L2	06
	b	Describe the following with respect to hydro power plant i) Dam ii) penstock iii) Surge tank iv) Tail race	L1	08
	c	Discuss the utility of hydrograph, flow duration curve & mass curve for the hydro power plants.	L2	06
Module-2				
Q. 03	a	Explain with block diagram the process of fuel handling in a thermal power plant.	L2	06
	b	List the advantage and disadvantages of using pulverized fuel in thermal power plant	L1	08
	c	Discuss the functions of condenser, cooling towers and economizer in thermal power plant.	L2	06
OR				
Q.04	a	Explain with schematic diagram the open cycle and closed cycle gas turbine power plants.	L2	08
	b	Discuss the following in diesel power plant i) Fuel supply system ii) Air intake system iii) Lubricating System iv) Engine starting system	L2	06
	c	Discuss the application of diesel power plant.	L2	06
Module-3				
Q. 05	a	Explain the following with respect to nuclear power plant: i) Nuclear fuel ii).Control rod material iii) Cladding and structural materials iv) Coolants	L2	08
	b	Discuss with neat schematic diagram i) Boiling water reactor ii) Pressurized water reactor	L2	06
	c	Discuss the classification of nuclear reactors.	L2	06
OR				
Q. 06	a	List the advantages and disadvantages of nuclear power plant.	L1	08
	b	Discuss the factors to be considered for site selection of nuclear power plant.	L2	06
	c	Discuss the disposal of nuclear waste in nuclear power plant.	L2	06

Module-4				
Q. 07	a	Explain the following i) Resistance grounding ii) Resonant grounding	L2	08
	b	Derive with a neat schematic diagram and phasor diagram an expression for inductance of Peterson coil in terms of capacitance of the system.	L3	06
	c	Discuss the factors to be considered for site selection of substation	L2	06
OR				
Q. 08	a	Discuss the classification of substations.	L2	06
	b	Explain the advantages and disadvantages of gas insulated substation.	L2	06
	c	Derive with a neat schematic diagram and phasor diagram an expression for capacitive fault current in a ungrounded neutral system.	L3	08
Module-5				
Q. 09	a	A domestic consumer has 10 lamps of 60 watts each, connected in his house. His demand is given as follows: Midnight to 5am50 watt 5 am to 6 pmno-load 6pm to 7 pm390watt 7pm to 9pm340watt 9pm to 12 midnight190watt Plot the load curve, Determine: i) average load ii) maximum load iii) load factor iv) energy consumption during one day.	L3	08
	b	Derive an expression for most economical power factor when kVA demand is kept constant	L3	06
	c	Explain the principal factors affecting the tariff fixation.	L2	06
Q. 10	a	A 300 kVA distribution transformer costs Rs.20000 & has a salvage value of Rs.1000 at the end of 20 Years. Determine the depreciated value of the power plant at the end of ten years on the following methods of assessment. i). Straight line depreciation. ii).Sinking fund depreciation of 8% compounded annually.	L3	08
	b	List the objectives and requirements of tariff.	L1	06
	c	Discuss the effects of low power factor.	L2	06

*Bloom's Taxonomy Level: Indicate as L1, L2, L3, L4, etc. It is also desirable to indicate the COs and POs to be attained by every bit of questions.