

Code No: P21EET04

HALL TICKET NUMBER

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PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)

II B.TECH I SEMESTER END SUPPLEMENTARY EXAMINATIONS, MARCH/APRIL - 2023

POWER SYSTEM - I

(EEE Branch)

Time: 3 hours

Max. Marks: 70

Answer all the questions from each UNIT (5X14=70M)

Q.No.	Questions	Marks	CO	KL
UNIT-I				
1.	a) What are the different parameters to be considered to construct a hydroelectric power plant?	[7M]	1	2
	b) What are the merits and demerits of hydro-electric plant?	[7M]	1	2
OR				
2.	a) Explain the boiler used in thermal power station.	[7M]	1	1
	b) What is the function of electrostatic precipitator used in the chimney of a thermal power station? Explain.	[7M]	1	2
UNIT-II				
3.	a) What is a moderator? Name some common moderators and discuss their advantages and limitations.	[7M]	2	2
	b) Brief description of PWR and BWR?	[7M]	2	2
OR				
4.	Draw the schematic diagram of Nuclear Power Plant. State factors to be considered for selection of site for the NPS.	[14 M]	2	3
UNIT-III				
5.	a) Draw the 11 KV substations with layout showing the location of all the substation equipment?	[7M]	3	3
	b) Explain the various factors to be considered to decide the ideal location of substation.	[7M]	3	3
OR				
6.	a) Explain the different types of gas insulated substations?	[7M]	3	1
	b) Write advantages of gas insulated substations?	[7M]	3	2
UNIT-IV				
7.	a) Define the term power factor and write the disadvantages of low power factor?	[7M]	4	1
	b) What are equipments used for power factor improvement and explain them?	[7M]	4	2
OR				
8.	a) Explain the different types of insulating materials and derive the insulation resistance?	[7M]	4	2
	b) Derive the formula for capacitance of a 3- core belted Cables?	[7M]	4	3
UNIT-V				
9.	a) The annual peak load on a 30MW power station is 25MW. The power station supplies loads having maximum demands of 10MW, 8.5MW, 5MW and 4.5MW. The annual load factor is 45%. Find: (a) Average load (b) Energy supplied per year (c) Demand factor (d) Diversity factor	[7M]	5	4



	b)	Explain integrated load duration curve.	[7M]	5	2
OR					
10.	a)	A consumer has an annual consumption of 176400 KWh. The charge is Rs 150/-per KW of maximum demand plus 15 paise per KWh. Find the annual bill if the load factor is 40%.	[7M]	5	4
	b)	Explain the different types of Tariff methods?	[7M]	5	2
