

Code No: P21EET04

HALL TICKET NUMBER

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PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)
II B.TECH I SEMESTER END REGULAR EXAMINATIONS, JAN - 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.	Draw a neat schematic diagram of a hydro-electric plant and write the functions of various components.	[14M]	1	3
OR				
2.	a) Explain the necessity of a condenser used in the thermal power station.	[7M]	1	2
	b) Explain the super heater in thermal plants.	[7M]	1	2
UNIT-II				
3.	a) Explain the types of Nuclear Reactors?	[7M]	2	3
	b) With a neat schematic diagram, explain the operation of a nuclear power plant?	[7M]	2	1
OR				
4.	a) What is meant by chain reaction in nuclear power plant Also explain the process of nuclear fission?	[7M]	2	2
	b) Explain the nuclear reactor components?	[7M]	2	1
UNIT-III				
5	a) Explain different busbar arrangements with neat sketch.	[7M]	3	3
	b) Draw the Substation layout by showing the location of all substation equipment?	[7M]	3	4
OR				
6	a) Explain the Installation and maintenance of gas insulated substations?	[7M]	3	2
	b) Compare the Air and Gas insulated substations?	[7M]	3	2
UNIT-IV				
7	a) Define the term power factor triangle and explain the causes for low power factor in power system.	[7M]	4	1
	b) Write short notes of methods of Power factor improvement?	[7M]	4	2
OR				
8	a) Derive the formula for capacitance of a single core belted Cable?	[7M]	4	3
	b) Describe with a neat sketch, the construction of a single core cable. Discuss the limitations of such a cable.	[7M]	4	2
UNIT-V				
9	a) Explain about load curve and load duration curve with one example.	[7M]	5	2
	b) The maximum demand of a generating station is 200MW. The annual load factor being 60%. Calculate the total electrical energy generated per year.	[7M]	5	4
OR				
10	a) Briefly explain how “Two part tariff” is most justified.	[7M]	5	2
	b) A consumer has a maximum demand of 200 KW at 40% load factor. If the tariff is Rs100/- per KW of maximum demand plus 10paise per KWh. Find the overall cost per KWh.	[7M]	5	4
