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## P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Seventh Semester, B.E. - Electrical and Electronics Engineering Semester End Examination; Jan. / Feb. - 2021 Power Plant Engineering

Tin	ne: 3 hrs Max. Marks: 100					
Note	e: Answer FIVE full questions, selecting ONE full question from each unit.					
	UNIT - I					
1 a.	Discuss the functions of different components in storage reservoir plants.					
b.	With neat layout diagram, explain the operation of a Hydro electric power plant.					
2 a.	Explain the main parts and working of a typical coal-fired power station with its layout diagram.					
b.	Explain fuel and ash handling systems for thermal power stations.					
υ.	UNIT - II					
2 0	With neat sketch, explain the main components of nuclear reactor.					
3 a.	•					
b.	7 1					
c.	What are the factors to be considered for selection of site for a nuclear power plant?					
4 a.	Explain choice and characteristics of diesel engines.					
b.	Explain boiling water reactor. Mention its advantages and disadvantages.					
c.	What are the principal fields of use of diesel electric station?					
	UNIT - III					
5 a.	Explain distributed generation. Mention its applications.					
b.	Explain solar power in brief. Mention its applications.					
6 a.	With neat sketch, explain geothermal power generation. Mention its advantages and disadvantages.					
b.	Explain briefly about Biofuel generation.					
c.	Mention any four advantages of gas power plants over steam power plant.					
	UNIT - IV					
7 a.	Define the terms:					
	i) Load factor ii) Plant use factor					
	iii) Utilization factor iv) Demand factor v) Coincidence factor					
b.	A generating station has the following data:					
	Installed capacity = 500 MW; Capacity factor = 45%; Annual load factor = 60%;					
	Annual cost of fuel oil etc = Rs. $10 \times 10^7$ ; Capital cost = Rs. $10^9$ ;					
	Annual interest and depreciation = 15%. Calculate;					
	i) Minimum reserve capacity of plant					

ii) The cost per KWh generated

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8 a.	What is Tariff? Explain different types of Tariffs.	10					
b.	Explain load duration curve.	6					
c.	c. A generating station has a maximum demand of 500 MW. The annual load factor is 50%						
	and capacity factor is 40%. Find the reserve capacity of the plant.	4					
UNIT - V							
9 a.	Explain resistance grounding. Mention its merits and demerits.	10					
b.	Define power factor. What are the disadvantages of low power factor? How power factor						
	can be improved by synchronous condenser method? Explain.	10					
10 a.	Explain earthing transformer in detail.	10					
b.	What is grounding? Explain Resonat grounding. Also explain Arc suppression coil.	10					

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