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Reg. No: ☐☐☐☐☐☐☐☐☐☐

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech II Year I Semester Regular Examinations May-2022
GENERATION OF ELECTRICAL POWER
(Electrical and Electronics Engineering)

Time: 3 hours   Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	With neat sketch explain the operation of modern steam power station and mention its advantages and disadvantages.	L3	12M

OR

2	a	List out the factors to be considered while selecting the site for hydroelectric power plant.	L1	6M
	b	Distinguish various turbines used in hydroelectric power station in several aspects.	L2	6M

UNIT-II

3	a	Explain the principle of operation of nuclear reactor with neat diagram.	L3	6M
	b	Explain shielding and safety precautions in nuclear power plants.	L2	6M

OR

4	a	What is Chain Reaction? Explain Nuclear Fission and Fusion Process.	L1	8M
	b	Write a short note FBR.	L3	4M

UNIT-III

5	a	Explain the working principle of solar flat plate collectors.	L3	6M
	b	Explain the V-I characteristics solar PV cell.	L3	6M

OR

6	Explain principle of operation and working of Wind Power Plant.	L3	12M

UNIT-IV

7	a	List out the economic and environmental aspects of bio gas generation.	L1	6M
	b	Explain the working principle of bio gas power generation with neat sketch.	L3	6M

OR

8	a	Explicate the working principle of ocean thermal energy conversion.	L2	8M
	b	Mention the advantages and disadvantages of geo thermal energy.	L1	4M

UNIT-V

9	An industrial consumer having a maximum demand of 100kw maintains a load factor of 60%. The tariff rates are Rs.900 per KVA of maximum demand per anum plus Rs.1.80 Per KwH of energy consumed. If the average power factor is 0.8 lagging, calculate: i) Total energy consumed per annum ii) The annual electricity bill and iii) The overall cost per KwH consumed.	L4	12M

OR

10	a	A generating station has a maximum demand of 500MW.The annual load factor is 50% and capacity factor is 40%. Find the reserve capacity of the plant.	L4	6M
	b	Discuss the two part tariff and power factor tariffs.	L2	6M

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