SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech II Year I Semester (R16) Regular Examinations November 2017
GENERATION OF ELECTRIC POWER
(ELECTRICAL & ELECTRONICS ENGINEERING)

Time: **3 hours**   Max. Marks: **60**

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

UNIT-I

1		Explain the function and principle of the following in thermal power plant.
		i)Economizer ii)Electrostatic precipitator iii)Condenser
		iv)super heater v) cooling tower vi) Chimney 12M

OR

2	a	What are the factors to be considered for the selection of site for a steam power plant?	6 M
	b	Explain how the steam boilers are classified.	6 M

UNIT-II

3	Draw the layout of hydropower station and discuss its generation.	12M

OR

4	a	Explain about the fast breeder reactor.	6M
	b	Explain about PWR.	6M

UNIT-III

5	Explain the working of vertical and horizontal wind mill mentioning the specific arrangement of blades.	12M

OR

6	a	Explain the main components of a flat plate solar collector?	6M
	b	Explain solar pond with neat diagram	6M

UNIT-IV

7	a	Explain one type of Biogas digester with neat diagram.	6M
	b	Explain the environmental aspects of Biogas energy generation in detail.	6M

OR

8	a	Explain with neat sketch about OTEC system.	6M
	b	Explain Principle of Tidal and Wave Energy.	6M

UNIT-V

9	a	Explain the load curve and factors that can be deduced from the curve.	6M
	b	A generating station has got maximum demand of 50MW. Calculate the cost/kwh delivered from the following data.	

1. Capital cost of Rs. 95×10^6 2. Annual cost of fuel and oil Rs. 9×10^6
3. Taxes, wages and salaries Rs. 6×10^6
The rate of interest and depreciation is 10% and annual load factor is 50%.   6M

OR

10	a	Explain tariff and characteristics of a tariff.	6 M
	b	An industrial consumer has maximum demand of 120 kW and maintains a load factor of 80%. The tariff in force is Rs. 60 per kVA of maximum demand plus 8 paise per unit. If the average p.f. is 0.8 lagging, calculate the total energy consumed per annum and the annual bill.	6 M

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