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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)**B.Tech II Year I Semester Regular & Supplementary Examinations of Nov/Dec 2018****GENERATION OF ELECTRIC POWER**

(EEE)

Time: 3 hours

Max. Marks: 60

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

- 1 Draw the complete schematic diagram of a coal fired thermal power plant. Label each component. Discuss briefly the function of each component. 12M

**OR**

- 2 a Write short notes on the following: 6M  
i) Super heater in a boiler ii) Steam condenser  
b Discuss the need of cooling towers and list out various types of cooling towers. 6M

**UNIT-II**

- 3 a Discuss working of a hydro-electric plant with a neat diagram. 8M  
b List the merits and demerits of a hydro-electric plant. 4M

**OR**

- 4 a Explain the types of nuclear reactors with operation and draw its neat sketch. 8M  
b What are the advantages and disadvantages of nuclear power stations? 4M

**UNIT-III**

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

**OR**

- 6 a Explain any two types of concentrating solar collectors with neat sketch. 7M  
b Explain the role and potential of solar energy in the present energy crisis in the world. 5M

**UNIT-IV**

- 7 Briefly write about different models of biogas plants. 12M

**OR**

- 8 a i) Define geothermal energy. 4M  
ii) What are the advantages and disadvantages of ocean thermal energy?  
b Classify the tidal power plants and also explain the operation of tidal power plant. 8M

**UNIT-V**

- 9 a Explain the load curve and factors that can be deduced from the curve. 6M  
b A generating station has the following daily load cycle

Time (Hrs)	0-6	6-10	10-12	12-16	16-20	20-24
Load (MW)	40	50	60	50	70	40

Draw the load curve and find

- (i) Maximum demand (ii) Units generated per day  
(iii) Average load and load factors. 6M

**OR**

- 10 a Explain tariff and characteristics of a tariff. 7M

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**b** A generating station has got maximum demand of 50MW. Calculate the cost/kwh delivered from the following data.

1. Capital cost of Rs.  $95 \times 10^6$
2. Annual cost of fuel and oil Rs.  $9 \times 10^6$
3. Taxes, wages and salaries Rs.  $6 \times 10^6$

The rate of interest and depreciation is 10% and annual load factor is 50%. 5M

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