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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)**B.Tech II Year I Semester Supplementary Examinations Nov/Dec 2019****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 of the following in thermal power plant and explain the principle of operation of each. a) Economizer b) Electrostatic precipitator c) Condenser d) Super heater e) Cooling tower. **12M**

**OR**

- 2 Discuss about natural and forced draughts with neat sketches and list out the difference between them. **12M**

**UNIT-II**

- 3 Draw the schematic diagram of a nuclear power station and discuss its operation. **12M**

**OR**

- 4 a Discuss the merits and demerits of a hydro-electric plant. **6M**  
b Explain about the fast breeder reactor. **6M**

**UNIT-III**

- 5 a Explain Horizontal Axis wind mills. **6M**  
b Describe about flat plate solar collector with a relevant sketch. **6M**

**OR**

- 6 a Explain Vertical Axis wind mills. **6M**  
b Write short notes on Savonius rotor. **6M**

**UNIT-IV**

- 7 a Explain any one type of biogas digester with neat diagram and their advantages and Disadvantages. **6M**  
b What is gobar gas? How it is being prepared? **6M**

**OR**

- 8 a Draw schematic diagram of geothermal system and explain. **6M**  
b Explain the factors affecting bio-digestion of gas. **6M**

**UNIT-V**

- 9 a 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 annum 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. **6M**  
b Define block rate tariff and power factor tariff. **6M**

**OR**

- 10 a Explain how a load duration curve is plotted. What is its use? **6M**  
b The maximum demand of a generating station is 200MW. The annual load factor being 60%, calculate the total electrical energy generated per year. **6M**

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