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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech III Year I Semester Supplementary Examinations November-2020

NON-CONVENTIONAL ENERGY RESOURCES

(MECHANICAL ENGINEERING)

Time: 3 hours

Max. Marks: 60

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

UNIT-I

- 1 a** Explain in brief about solar radiation **7M**
b Derive an Expression for solar radiation on tilted surfaces. **5M**

OR

- 2 a** Mention the importance of measuring wind speed and classify its measuring instruments **6M**
b Describe the working of hot wire anemometer with a neat sketch **6M**

UNIT-II

- 3 a** Explain the working principle of concentrating collector **6M**
b How steam will be generated with parabolic dish collector. Explain **6M**

OR

- 4 a** Write the applications of solar energy. **6M**
b Explain the working principle of solar PV cells. **6M**

UNIT-III

- 5 a** Explain the performance of wind machines. **6M**
b What are the safety and environmental impact of wind energy? **6M**

OR

- 6** Classify the wind turbines and explain their working in detail. **12M**

UNIT-IV

- 7 a** What is biomass and why it is called as renewable energy? **6M**
b What are the different forms of bio-energy **6M**

OR

- 8 a** Describe the working of Spreader stoker with a neat sketch **6M**
b Mention the need of Fluidized Bed Combustion and explain it with a neat diagram **6M**

UNIT-V

- 9 a** How do you classify hydrogen production method and mention any one in detail **6M**
b Mention the applications of hydrogen **6M**

OR

- 10 a** What is the geothermal energy and explain its extraction process **6M**
b Explain Geothermal binary cycle power plant with neat diagram **6M**

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