

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year I Semester Regular & Supplementary Examinations February-2024
NON-CONVENTIONAL ENERGY RESOURCES
(Open Elective-I)

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

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

UNIT-I

- 1 a "Economic growth of a country depends on Energy". Justify CO1 L5 6M
b Explain any three renewable energies. CO1 L2 6M

OR

- 2 a Assess the need of renewable energy resources. CO1 L5 6M
b Describe the impact of Energy Utilization on environment. CO1 L2 6M

UNIT-II

- 3 Illustrate the functions of various components in flat plate collectors. CO2 L2 12M

OR

- 4 a Explain the working principle of flat plate collector with a neat sketch. CO2 L2 6M
b Derive an equation for the thermal analysis of a flat plate collector. CO2 L4 6M

UNIT-III

- 5 a Explain the process of wind formation. CO3 L2 6M
b List the merits and demerits of wind energy. CO3 L2 6M

OR

- 6 Describe the functions of wind energy system components. CO3 L2 12M

UNIT-IV

- 7 a Tell about biomass gasifier? Write its gasification reactions. CO4 L1 6M
b How do you classify the gasifiers? Explain anyone in detail. CO4 L1 6M

OR

- 8 a Classify the Biomass energy conversion systems and explain them in brief. CO4 L2 6M
b Discuss the fermentation, aerobic and anaerobic digestion processes. CO4 L2 6M

UNIT-V

- 9 a How do you classify hydrogen production methods? Explain any one in detail CO5 L2 6M
b List all the applications of hydrogen. CO5 L4 6M

OR

- 10 a What are the different methods of hydrogen storage? CO5 L1 6M
b Distinguish between wave and tidal energy. CO5 L5 6M

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