

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year II Semester Supplementary Examinations May/June-2024

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 Define conventional and Non-Conventional energy with examples. CO1 L1 6M
b Explain briefly any three renewable energies. CO1 L2 6M

OR

- 2 Describe Renewable Energy Scenario in Andhra Pradesh. CO1 L1 12M

UNIT-II

- 3 a Outline the challenges and remedies associated in the use of solar energy. CO2 L2 6M
b Illustrate the functions of various components in flat plate collectors and also explain the working principle of flat plate collector. CO2 L2 6M

OR

- 4 a Explain the process of generation of power in solar pond with a neat sketch and also mention its merits and demerits CO2 L5 6M
b List out the applications of solar PV cell. CO2 L1 6M

UNIT-III

- 5 a Discuss the importance of measuring wind speed and name its measuring instruments. CO3 L6 6M
b List out the uses and working of wind sock in aviation industry. CO3 L4 6M

OR

- 6 a Differentiate between HAWT and VAWT. CO3 L4 6M
b Explain briefly the functioning of Darrieus Wind Turbine. CO3 L2 6M

UNIT-IV

- 7 a What is biomass and why is it called renewable energy? CO4 L1 6M
b Explain about biomass direct combustion. CO4 L2 6M

OR

- 8 a Classify the Biomass energy conversion systems and explain them in brief. CO4 L2 6M
b Explain the working of biomass Cogeneration system with a neat sketch and also mention its applications. CO4 L2 6M

UNIT-V

- 9 a List out the merits and demerits of hydrogen energy CO5 L1 6M
b What is the nature of tidal power extracted from single basin arrangement and double basin arrangement? CO5 L1 6M

OR

- 10 a What are the different methods of hydrogen storage? CO5 L1 6M
b Explain Geothermal binary cycle power plant with neat diagram. CO5 L1 6M

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