

Code No: 138GW**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech IV Year II Semester Examinations, July - 2021****RENEWABLE ENERGY SOURCES****(Common to EEE, CSE)****Time: 3 hours****Max. Marks: 75****Answer any Five Questions
All Questions Carry Equal Marks**

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- 1.a) Explain the significance of energy consumption as a measure of prosperity.
- b) List the difference between renewable and non renewable energy resources. [8+7]
- 2.a) Explain in brief the world energy scenario along with the alternate energy strategies.
- b) Explain the global potential of renewable energy sources. [7+8]
- 3.a) Explain the component parts of a solar PV system along with their functions.
- b) With a neat sketch explain the principle of conversion of solar energy into heat. [7+8]
- 4.a) List out the advantages and disadvantages of concentrating collectors over a flat- plate collector.
- b) Explain the importance of orientation in concentrating type collectors and list the different types of sun trackers. [8+7]
- 5.a) Give an overview of control techniques for wind turbine systems along with their significance.
- b) Explain about primary, secondary and tertiary winds and how to make use of them for power generation. [8+7]
- 6.a) Distinguish between onshore and offshore wind energy systems.
- b) Discuss the concept of wheeling and energy banking. [8+7]
- 7.a) Explain the method for converting biomass into ethanol with a neat sketch.
- b) Explain the process of extracting energy for municipal solid waste. [8+7]
- 8.a) What is geothermal energy and explain the types geo thermal power plants?
- b) List out the types of turbines for small hydro power plants and explain them. [8+7]

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