

Code No: 156DX

**R18**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech III Year II Semester Examinations, February/March - 2022**

**NON-CONVENTIONAL ENERGY SOURCES**

**(Common to CE, EEE, ME, ECE, CSE, IT, MIE)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any five questions  
All questions carry equal marks**

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1. Discuss energy requirement of rural consumers and state the possible alternative source of energy to meet the demand. [15]
- 2.a) Write about Extraterrestrial Radiation and Terrestrial Radiation  
b) What are the types of solar radiation measuring Instruments? [10+5]
- 3.a) Enumerate the different types of concentrating type collectors.  
b) What are the applications of direct energy conversion systems? [8+7]
- 4.a) Illustrate the working of solar desalination system.  
b) Describe with a neat sketch working of a solar water heating system. [7+8]
5. What is the basic principle of ocean thermal energy conversion? What are the main types of OTEC power plants? Describe their working in brief. [15]
- 6.a) Discuss principle used in the measurement of speed of the wind.  
b) Tabulate the main applications of wind energy. [8+7]
7. Generalize the factors to be consider for the site selection to install the wind power plant. Explain the construction and working of Vertical Axis Wind Turbine (VAWT). [15]
8. Discuss the following methods of biogas generation  
a) Gasification  
b) Combustion. [8+7]

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