

Code No: 156EA

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

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

RENEWABLE ENERGY SOURCES

(Common to CE, ME, ECE, CSE, IT)

Time: 3 Hours

Max. Marks: 75

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

1.a) Explain the importance of renewable energy sources and their potential in Indian energy sector.

b) Discuss about Modern electronic controls of power systems. [7+8]

2.a) Discuss the performance characteristics of Horizontal axis wind turbine.

b) Explain the speed control used in wind power energy analysis of small generating systems. [7+8]

3.a) List out the differences between flat plate collector and concentrated collector.

b) Explain with a neat sketch, the working of photo-voltaic cell. Draw I-V characteristics. [7+8]

4.a) Describe how hydrogen can be used as an alternate fuel for motor vehicles.

b) Write a short note on:
i) Seebeck, Peltier ii) Fuel cells [7+8]

5.a) Explain Self-Excited Induction Generator.

b) Discuss the interconnected and stand-alone operation of induction generators. [7+8]

6.a) Discuss speed and voltage control of self-excited induction generators.

b) Explain Economical aspects of induction generators. [8+7]

7.a) Explain compressed air energy storage system.

b) Explain pumped energy storage system. [8+7]

8.a) Discuss standards and codes for inter connection of renewable energy sources to grid.

b) Elaborate interconnection technologies of alternate energy sources. [8+7]

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