

Code No: 138EN

**R16**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech IV Year II Semester Examinations, September - 2020**

**RENEWABLE ENERGY SOURCES**

**(Mechanical Engineering)**

**Time: 2 Hours**

**Max. Marks: 75**

**Answer any Five Questions  
All Questions Carry Equal Marks**

- - -

- 1.a) List the advantages and limitations of renewable energy sources.
- b) Name five independent ultimately primary sources of energy. [8+7]
2. Explain the role and potential of new and renewable energy sources. [15]
- 3.a) What are the reasons for variation in solar radiation reaching the earth than received at the outside of the atmosphere?
- b) Explain the performance characteristics of a Solar Cell. [8+7]
- 4.a) How can solar thermal energy be converted into electrical energy?
- b) Write a short note on solar thermal storage devices. [8+7]
- 5.a) Explain the factors influencing the wind.
- b) Explain the status of wind energy in India. [8+7]
- 6.a) What is Betz limit? How do you assess wind resource.
- b) Write a short note on wind energy conversion devices. [8+7]
- 7.a) Compare and contrast the biomass and biogas.
- b) What is a community biogas plant? Explain the problems encountered in it. [7+8]
8. Explain the principle of ocean thermal energy conversion. [15]

---ooOoo---