

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

**CLASS: BTECH**  
**BRANCH: ALL OTHER THAN MECHANICAL**

**SEMESTER : V**  
**SESSION : MO/2022**

**TIME: 3:00 Hours**  
**SUBJECT: ME392 RENEWABLE ENERGY SOURCES**

**FULL MARKS: 50**

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
- 

- Q.1(a) What do you mean by renewable energy? Give Examples. [2]  
Q.1(b) What is the difference between conventional and non-conventional energy resources? [3]  
Q.1(c) Explain briefly the advantages and limitations of renewable energy. [5]
- Q.2(a) Explain the term solar radiation and solar constant. [2]  
Q.2(b) Distinguish between flat collectors and concentrating collectors. [3]  
Q.2(c) Sketch and Explain solar photovoltaic, solar cell and solar green houses. [5]
- Q.3(a) Explain the wind energy scenario in India. [2]  
Q.3(b) Sketch and Explain WECS. [3]  
Q.3(c) Derive equation for power in the wind. Mention its ( WECS )advantages and disadvantages. [5]
- Q.4(a) Explain briefly BIO MASS conversion technologies. [2]  
Q.4(b) Sketch and Explain biomass to ethanol production. [3]  
Q.4(c) Sketch and Explain any type of bio gas plant. [5]
- Q.5(a) What is the principle of tidal power? [2]  
Q.5(b) What are components of tidal power plants? Explain functions of all components. [3]  
Q.5(c) How will you explain the function of ocean thermal energy conversion(OTEC). [5]

:::25/11/2022:::M