Printed Pages: **Sub Code:EOE081**

Paper Id: | 1 | 9 | 9 | 8 | 0 | 5 | **Roll No.** | | | | | | | | | | |

B.TECH.
(SEM IV) THEORY EXAMINATION 2017-18
NON CONVENTIONAL ENERGY RESOURCES

Time: 3 Hours   *Total Marks: 100*

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1.   Attempt *all* questions in brief.   **2 x 10 = 20**

   a.   What are commercial energy resources?
   b.   What do you understand by non renewable resources?
   c.   What is fossil fuel?
   d.   What do mean by hydrogen energy?
   e.   What is ocean thermal energy?
   f.   Write short note on photovoltaic effect.
   g.   Define semiconductors
   h.   Write down the advantages and disadvantages of flat plate collector
   i.   Write the name of any four wave energy conversion devices.
   j.   What are different types of waste?

SECTION B

2.   Attempt any *three* of the following: **10 x 3 = 30**

   a.   What do you mean by non conventional energy resources? Discuss in detail
   b.   What is MNRE? Define and explain renewable and non renewable energy resources
   c.   Explain the energy scenario in Indian context.
   d.   Explain the solar photovoltaic system with neat diagram.
   e.   Write a detail note on solar cell array.

SECTION C

3.   Attempt any *one* part of the following: **10 x 1 = 10**

   (a)   Describe the construction of solar flat plate collector. How is its performance evaluated?

   (b)   What is geothermal energy? Discuss different systems used for generating the power using geothermal energy

4.   Attempt any *one* part of the following: **10 x 1 = 10**

   (a)   Explain the concentrating solar collector. Also discuss its working.

   (b)   Explain the working principle of MHD power generation.

5.   Attempt any *one* part of the following: **10 x 1 = 10**

(a) Classify various energy storage systems. Explain sensible heat and latent heat energy storage of solar energy.

(b) Sketch and explain the functioning of solid oxide fuel cell.

6. Attempt any *one* part of the following: **10 x 1 = 10**

(a) Describe the working of thermoelectric generator with neat diagram. Derive an expression for its power output.

(b) Explain the principle for power generation in wind mills. Derive the expression for maximum efficiency (Momentum theory).

7. Attempt any *one* part of the following: **10 x 1 = 10**

(a) Explain various types of OTEC systems with neat diagram..

(b) What do mean by recycling management? What are the advantages of recycling waste