Roll No. | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ME) (E-I 2011 onwards) (Sem.–6)

NON-CONVENTIONAL ENERGY RESOURCES

Subject Code : DE/ME-1.3

Paper ID : [A2404]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A

1. Write briefly :

a. Enumerate criteria based on which Energy can be classified.

b. List the energy options available in India.

c. Why solar photovoltaic power generation is not commercially viable?

d. Give four major products based on solar thermal energy.

e. Enumerate factors on which wind power generation depends and name states in India where wind power generation is harnessed.

f. Give a block diagram of devices used for converting wave power into mechanical power.

g. Name various sources of Geothermal energy and mention its types.

h. What do you mean by thermo-electric refrigeration?

i. What is a Wind Mill? Mention dynamic forces acting on wind mill blades.

j. Briefly explain the concept of bio-mass conversion.

SECTION-B

2. Explain the various operational problems associated with solar pond.

3. With a neat sketch explain horizontal axis Wind Mill.

4. Draw a neat sketch of Bio gas plant and explain its working.

5. What is meant by Direct Energy Conversion Systems? With the help of a neat diagram, discuss the principle of thermo-electric generator.

6. Discuss various precautions to be observed during operation of a Geothermal Power Plant. State requirements for economic viability of such plant.

SECTION-C

7. Explain the method to find out the transmissivity of flat plate collector with two glass covers.

8. What is Magnetic Hydrodynamic generation? Explain working principle of such a generator.

9. Write note on :

   a. Working principle of a solar cell.

   b. Working of a double basin tidal power plant.