B.Tech. – VIEP – MECHANICAL ENGINEERING (BTMEVI)

Term-End Examination

00745   **December, 2014**

BIMEE-003 : NON-CONVENTIONAL ENERGY RESOURCES

Time : 3 hours   *Maximum Marks : 70*

Note : *Answer any **five** questions. All questions carry equal marks.*

1. (a) Explain the geometry of solar radiation and define various angles used for its measurement.   7

    (b) What is a pyranometer ? How is it used to measure solar radiation ? Explain.   7

2. (a) What is meant by solar concentrating collector ? With the help of a schematic diagram, explain the working of a paraboloid concentrating solar collector.   7

    Describe the process of space heating by 'ssive method using solar energy.   7

3. (a) Explain how solar pond combines the functions of heat collection and provides sufficient heat for the entire year. 7

   (b) What are the main parts of a liquid flat-plate collector ? What are its advantages and disadvantages over other types of solar collectors ? 7

4. (a) Name the constituents of bio-gas. Explain how bio-gas is produced by aerobic and anaerobic bio-conversion process. 7

   (b) How is bio-gas transported ? What are its applications ? 7

5. (a) What are the different types of windmills ? Explain their characteristics. 7

   (b) Discuss tides and waves as a source of energy. What are the limitations of tidal energy conversion ? 7

6. (a) Discuss physico-chemical properties of hydrogen. What are the prob¹⁻ associated with the use of hyd⁻ fuel ?

   ₹

   (b) Explain the vạ⁻' energy.

7. (a) Discuss the of acidic and cells.

   (b) What is photov various applicati

BIMEE-003

8. Write short notes on any *two* of the following : 2×7=14

   (a) Producer gas

   (b) Solar power plants

   (c) Semiconductor materials

   (d) Power plant based on ocean energy

————