

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

00643

Term-End Examination

December, 2016

**BIMEE-003 : NON-CONVENTIONAL ENERGY
RESOURCES**

Time : 3 hours

Maximum Marks : 70

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

1. (a) State the different sources of energy with emphasis on 'Wind Energy'. 7
(b) Briefly explain energy exploited, energy planning and energy parameters. 7
2. (a) Describe the 'Geothermal energy process' and give its advantages and disadvantages. 7
(b) What is meant by solar radiation ? Explain with suitable sketch. 7
3. (a) Explain the working of a concentrating type solar collector with a neat sketch. State its advantages. 7
(b) Explain the application of a flat plate collector in space heating. 7

4. (a) Describe the solar photovoltaic system and its standards. 7
- (b) What is Bio-gas and what are its properties ? Discuss the different raw materials used in the production of bio-gas. 7
5. (a) Explain the availability of wind energy in India and the recent developments to make it useful. 7
- (b) State the principle of operation of an acidic fuel cell and explain the operating characteristics of fuel cells. 7
6. (a) Explain how tidal energy can be converted into electrical energy with suitable sketch. 7
- (b) Briefly describe the properties of thermoelectric materials. 7
7. Write short notes on any **four** of the following : $4 \times 3 \frac{1}{2} = 14$
- (a) Fusion Plasma Generation
- (b) Tidal Energy
- (c) Fuel Cell
- (d) Biomass Co-generation
- (e) PV-Hybrid System
- (f) Solar Pumping