

**DIPLOMA IN MECHANICAL ENGINEERING
(DMEVI)**

Term-End Examination

December, 2012

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

Time : 3 hours

Maximum Marks : 70

Note : Answer *any five* questions.

1. (a) State the different sources of energy with emphasis on "wind energy". 7
(b) Describe the 'Geothermal Energy Process' and give its advantages and disadvantages. 7
2. (a) Write advantages, disadvantages and problems associated with Solar Power? 7
(b) What is meant by solar radiation. Explain. 7
3. (a) What is Solar Photovoltaic system and its standards ? 7
(b) Briefly discuss different types of solar-collectors. 7

4. (a) Define the following : 6
(i) Declination angle
(ii) Surface Azimuth angle
(iii) Hour angle
(b) State the applications of solar energy with suitable examples. 8
5. (a) What is Bio-gas and what are its properties ? 7
Discuss the different Raw materials used in its production.
(b) Explain how the power is generated from the liquid waste. 7
6. (a) What do you understand by 'Wind Machine'. Write its types and characteristics. 7
(b) Compare between acidic and alkaline hydrogen-oxygen fuel cells. 7
7. Write *any two* of the following : 2x7=14
(a) Tidal power
(b) Storage and Transportation of hydrogen energy.
(c) Properties of thermoelectric materials.
(d) PV hybrid system.
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