

**DIPLOMA IN MECHANICAL ENGINEERING  
(DMEVI)**

**Term-End Examination  
June, 2013**

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

*Time : 3 hours*

*Maximum Marks : 70*

*Note : Answer any five questions.*

1. (a) Discuss about "Tidal" and "Wave" energy. 6  
(b) Briefly explain Energy exploited, Energy planning and Energy parameters. 8
2. (a) Explain solar constant and solar radiations on earth. How measurement of solar radiations are carried out ? Describe. 7  
(b) Explain briefly Apparent motion of sun, day length and solar radiation data. 7
3. (a) Describe Thermal analysis of solar collectors. 7  
(b) State Photovoltaic effect and discuss the applications of PV system. 7

4. (a) Differentiate between the Aerobic and Anaerobic Bio-Conversion process. 7
- (b) List the applications of Bio-gas and state the problems involved in Bio-gas production. 7
5. (a) Explain the availability of wind energy in India and the recent developments to make it useful. 7
- (b) Discuss co-efficient of performance of a wind mill rotor and the aerodynamic considerations in wind mill design. 7
6. (a) State the principle of operation of an acidic fuel cells and explain the operating characteristics of fuel cells. 7
- (b) Explain the use of hydrogen, as a source of renewable energy. 7
7. Answer *any two* of the following : 2x7=14
- (a) Fusion plasma generators
- (b) Solar power plants
- (c) Wind energy farms
- (d) Extra terrestrial radiation
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