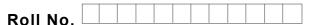
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Total No. of Pages : 02

Total No. of Questions : 09

# B.Tech. (ME) (2012 Onwards E-II) (Sem.-7) NON-CONVENTIONAL ENERGY RESOURCES

#### Subject Code : DE/ME-1.3

### M.Code: 71810

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. Answer briefly :

- a. Write the name of various energy resources. Distinguish between conventional and non-conventional energy resources.
- b. What do you mean by solar collectors?
- c. Name various sources of Geothermal energy and mention its types.
- d. Write the name of material used for thermionic emission.
- e. What is tidal energy?
- f. What are the advantages of MHD power generators?
- g. Enumerate the factors on which wind power generation depends and name states in India where wind power generation is harnessed?
- h. Write the name of materials used for bio-gas generation.
- i. Explain attenuation of solar radiation.
- j. What are the main sources of bio-mass?



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#### **SECTION-B**

- 2. What is meant by solar energy storage systems? Give their characteristics and discuss about their capacity.
- 3. With a neat sketch explain the working of horizontal axis wind mill.
- 4. Discuss various precautions to be observed during operation of a geothermal power plant. State requirements for economic viability of such plant.
- Discuss the concept of bio-mass conversion. Briefly discuss the working of biogas 5. generation plant.
- 6. Discuss the applications and economic aspects of fuel cells.

### **SECTION-C**

- 7. Discuss the applications of solar energy in water, space and process heating.
- 8. Write a short note on :
  - a. Open cycle MHD system.
- ercorr b. Site selection criteria for wind energy conversion.
- a. What is the basic difference between Thermo-electric and Thermo-ionic conversion 9. system? Explain the working of thermoelectric generator.
  - b. Explain the working of a tidal power plant.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.