

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ME) (E-I 2011 onwards) (Sem.-6)
NON-CONVENTIONAL ENERGY RESOURCES

Subject Code : DE/ME-1.3

Paper ID : [A2404]

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 have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

Q1) Write briefly :

- a) Name various conventional and non-conventional energy sources.
- b) What is fuel cell?
- c) What is bio-mass? How it is useful?
- d) Name some potential sites of geothermal energy source in India.
- e) List the applications of solar energy.
- f) How tides are generated?
- g) What is solar radiation? How it is measured?
- h) What is photo-synthesis?
- i) What is thermoionic emission?
- j) Discuss main applications of Wind energy.

SECTION-B

- Q2) What are the main strategies you think for meeting the future energy requirements?
- Q3) Describe various types of Flat Plate and Concentrated collectors with the help of suitable diagrams.
- Q4) Name the different direct energy conversion systems. Explain thermo-electric generators.
- Q5) Discuss briefly the single basin and double basin tidal power plants.
- Q6) Explain working principle of MHD (Magnetic Hydrodynamic) generator. Discuss MHD materials and production of magnetic fields.

SECTION-C

- Q7) Discuss briefly the types of biogas plant. How bio-energy may be useful for rural applications? Justify your answer.
- Q8) What are the basic components of wind energy conversion systems? Explain with suitable diagram and also list the various factors consider for site selection.
- Q9) Write short notes on :
- (a) Solar refrigeration and air conditioning.
 - (b) Sources of Geothermal energy.