Roll No. | | | | | | | | | | | | |

Total No. of Questions : 09

Total No. of Pages : 02

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.