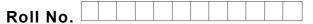
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Total No. of Pages : 02

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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

1. Answer briefly :

- a) What do you mean by renewable energy resources?
- b) Define attenuation.
- c) Distinguish between beam and diffuse radiation.
- d) *"Solar photovoltaic power generation is not commercially viable"*. Comment on this statement.
- e) Explain the principle of wind energy.
- f) State the merits of wind energy.
- g) List the limitations of geothermal energy.
- h) What is the function of a magnetic hydrodynamic generator?
- i) What is bio-mass? Give examples.
- j) Distinguish between tidal and wave energy.



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SECTION-B

- 2. Briefly discuss the need of non-conventional energy resources for the future power needs of India.
- 3. Describe the principle and working of a solar pond with neat sketch.
- 4. Give the detailed classification of wind machine. Explain anyone type of wind machine with neat sketch.
- 5. Explain the principle and working of a Magnetic Hydrodynamic Generator with the help of neat sketch.
- 6. What is a direct energy conversion system? Explain the working of thermionic converter with a neat sketch.

SECTION-C

- 7. a) Define solar constant. What are the reasons for variation in solar radiation reaching the earth than received at the outside of atmosphere?
 - b) Describe in brief, the different energy storage methods used in the solar system.
- 8. a) Explain the working of fuel cell and their applications.
 - b) Explain anyone type of biogas plant with neat sketch.
- 9. Write brief notes on the following :
 - a) Single basin and double basin tidal power plants.
 - b) Economic aspects of various direct energy conversion systems.