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Total No. of Questions : 09

Total No. of Pages : 02

B.Tech.(EE)   (Sem.–7)
NON CONVENTIONAL SOURCES
Subject Code : EE-418
M.Code : 57063

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS 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. **Write briefly :**

 a) Name the different sources of non-conventional energy sources.

 b) What are the drawbacks of conventional energy sources?

 c) Discuss the economical aspects of MHD generation?

 d) Define Thomson effect.

 e) What is Seeback effect?

 f) Discuss the properties of thermoelectric material.

 g) What is a solar collector?

 h) Define Gibb's free energy.

 i) What types of turbines are used in hydro-electric plants?

 j) Write a short note on wind energy.

SECTION-B

2. What are the advantages of MHD generation? Differentiate between open and closed MHD cycles.

3. Explain the construction and working of thermoelectric generators.

4. Draw the characteristics of photovoltaic cells. A flat plate solar collector having total flat area of 100 m^2 is subjected to an incident beam of sun light having power density 0.7 kW/m^2 in the direction of the beam. Find the power collected by the surface of collector if the angle of incidence is 60°.

5. Discuss the advantages, limitations and future prospects of fuel cells.

6. What are the different types of photovoltaic cells? Explain them in detail.

SECTION-C

7. How geothermal energy can be used for the generation of electricity? Explain with a suitable diagram.

8. Discuss the role of new energy sources in the context of present day energy crisis.

9. Write a short note on :

   a) Fuel Cells

   b) Tidal energy

NOTE : Disclosure of identity by writing mobile number or making passing request on any page of Answer sheet will lead to UMC case against the Student.