

Roll No.

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Total No. of Pages : 02

Total No. of Questions : 09

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 Seebeck effect?
- f) Discuss the properties of thermoelectric material.
- g) What is a solar collector?
- h) Define Gibbs 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.