

Exam.Code:0938
Sub. Code: 6997

2062
B.E. (Electrical and Electronics Engineering)
Eighth Semester
EE-801: Non Conventional Energy Sources

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

- a) Relate energy efficiency with energy conservation.
- b) Write the parameters governing the performance of thermoelectric materials.
- c) How spacing between the absorber and the cover influences the performance of a flat plate collector?
- d) What are the characteristics on which amount of power produced in a fuel cell depends?
- e) List the major components of small hydropower plants. (5x2)

UNIT - I

- II. What are the different types of MHD Generators? How seeding in MHD generation helps to attain the efficiency in the system. Discuss if any, the similarities and the differences between the two types of MHDs. (10)
- III. a) What are the properties essential for a thermoelectric material?
b) Find the hour angle at sunrise and sunset on June 20 for surface inclined at angle 20 degrees facing South at New Delhi. ($20^{\circ}35'N, 77^{\circ}12'E$) (2x5)
- IV. a) Discuss the parameters governing the performance of solar collectors?
b) What are photo voltaic (PV) cells? Draw and explain its IV characteristics. (2x5)

UNIT - II

- V. Explain the construction, working and operational characteristics of MCFC. (10)

P.T.O.

(2)

- VI. Why the design of barrage should be suitable to site conditions as well as economic aspect? Give the characteristics of turbines suitable for power sites? (10)
- VII. How to select a suitable turbine for a hydropower plant? Turbines with variable pitch blades are preferred. Why? (10)

x-x-x