

Exam.Code:0943
Sub. Code: 7070

1079
B.E. (Mechanical Engineering)
Seventh Semester
MEC-705(c): Renewable 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) List the disadvantages of renewable energy resources.
- b) Define zenith angle with respect to solar radiation.
- c) What is the function of fuel cell?
- d) What is the principle of bio conversion?
- e) Write two limitation of small hydro resources.
- f) What are the limitations of agriculture wastes?
- g) Why wind energy systems are not popular?
- h) What is the nature of tides?
- i) Define two phase flow turbines.
- j) Define system efficiency of OTEC.

(10x1)

UNIT - I

- II. a) Explain five factors and how they are affecting biodigestion or generation of gas.
b) Define radiative properties and spectral characteristic materials. (5,5)
- III. Describe the utilization of biogas effectively for cooking, lighting, operation of small engines and utilizing power for pumping water. (10)
- IV. What are the main component of wind energy conversion system (WECS).
Draw block diagram. And summarize the system operations. (5,5)

UNIT - II

- V. a) What are the site requirements for tidal power generation? Write a short note on prospect of tidal power. (5,5)
b) What are limitation of tidal power and wind energy? (10)
- VI. Compare open cycle OTEC system and closed OTEC cycle with schematic" (10)
- VII. Explain the working of hot dry rocks or petro thermal system with a neat sketch.(10)

x-x-x