

B.Tech IV Year I Semester (R13) Supplementary Examinations June 2017

NON CONVENTIONAL SOURCES OF ENERGY

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) What are the main advantages of WEC system?
 - (b) Define the term Altitude angle.
 - (c) How are Bio gas plants classified?
 - (d) Write the disadvantages of OTEC system.
 - (e) Define solar azimuth angle.
 - (f) State the major conventional and non-conventional energy sources.
 - (g) Write about Bio-Digestion.
 - (h) What is greenhouse effect?
 - (i) Write the basic principle of tidal power generation.
 - (j) What is the principle of Angstrom type pyrheliometer?

PART – B
(Answer all five units, 5 X 10 = 50 Marks)**UNIT – I**

- 2 What's the difference between a pyranometer and pyrheliometer? Draw neat diagram and explain about pyrheliometer.

OR

- 3 What is meant by nonconventional sources of energy? Explain in brief these energy sources with special reference to Indian context.

UNIT – II

- 4 Enumerate different types of concentrating type collectors. Describe a collector used in power plant for generation of electrical energy.

OR

- 5 What are the advantages and disadvantages of Concentrated collectors over flat plate collectors?

UNIT – III

- 6 Describe the working of a solar photovoltaic cell. With help of a neat diagram, explain the working of solar photovoltaic power system.

OR

- 7 With help of a neat schematic diagram, explain the working of WECS for generation of electric energy.

UNIT – IV

- 8 Give the broad classification of Bio gas plants. List different types of Bio gas plants available in India.

OR

- 9 Explain briefly different types of methods of harnessing of Geo thermal resources in detail.

UNIT – V

- 10 Explain with neat sketches, the various methods of tidal power generation.

OR

- 11 Explain the following:

- (a) MHD accelerator.
- (b) Magnetic flux.
- (c) Hall Effect.
- (d) Ionization.