Code: 13A03605

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)
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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.

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