

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0485

Roll No.

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B.Tech.

(SEM. VIII) THEORY EXAMINATION 2010-11

**NON-CONVENTIONAL ENERGY RESOURCES AND
UTILIZATION**

Time : 3 Hours

Total Marks : 100

Note : (1) Attempt **all** questions. Marks are indicated against each question/part.

(2) Give brief and to the point answer.

1. Answer any **two** parts of the following : **(10×2=20)**

(a) Discuss various sources of non conventional energy. Explain the principle of solar photovoltaic conversion.

(b) Answer the following :

(i) Discuss Zenith angle, hour angle and day length.

(ii) Write short note on measurement of solar radiation.

(c) What do you understand by the following :

(i) Spectral Distribution

(ii) Solar flux on a plane surface.

2. Answer any **four** parts of the following : **(5×4=20)**

(a) Describe cylindrical collector with the help of neat sketch.

- (b) Discuss the constructional detail of flat plate collector.
- (c) Give the classification of Solar Air Collectors. Discuss any one.
- (d) Make thermal energy balance for a flat plate solar collector.
- (e) Write short note on solar energy storage.
- (f) Write short note on solar cooking.

3. Answer any two parts of the following : (10×2=20)

- (a) With the help of neat sketch explain the working of a Biogas plant.
- (b) Explain the working and constructional detail of a wind mill with the help of neat sketch.
- (c) With the help of suitable example explain the procedure of design of a wind mill.

4. Answer any two parts of the following: (10×2=20)

- (a) Describe the principle of working and constructional detail of a basic Thermions System.
- (b) Explain the working and constructional detail of tidal energy conversion system.
- (c) Explain the use of Hydrogen as fuel, discuss problems associated with it.

5. Answer any two parts of the following : . . . (10×2=20)

- (a) Discuss properties of Thermoelectric materials. Explain working of Fusion Plasma Generator.
- (b) Explain the working of closed cycle OTEC system. Compare it with open cycle system.
- (c) Explain the working of Geothermal station with neat sketch.