

**CERTIFICATE IN ENERGY TECHNOLOGY AND
MANAGEMENT (CETM)**

Term-End Examination

June, 2011

**OEY-002 : RENEWABLE ENERGY
TECHNOLOGIES AND THEIR USES**

Time : 3 hours

Maximum Marks : 70

Note : Attempt any ten questions. All questions carry equal marks.

1. Describe in brief, different types of solar cookers. 7
2. List down the advantages of solar water heaters. 7
3. Discuss the performance of conventional solar still and its limitations. 7
4. Determine the range of wavelengths of solar radiation of generating electron - hole pairs in silicon. The energy gap of silicon is 1.15 eV. 7

Given : $h=6.6 \times 10^{-34}$ J.s

$c=3 \times 10^8$ ms⁻¹

1 eV = 1.602×10^{-19} J.

5. List the important merits of the renewable energy production technologies. 7
6. Describe in detail the roof top solar photovoltaic systems. 7
7. List the biomass technologies and describe their applications. 7
8. Describe how you can take advantage of biomass based technologies in your home and your community. 7
9. Discuss fixed dome biogas digesters. 7
10. Define *any seven* of the following : 7x1=7
 - (a) pH value
 - (b) Flash point
 - (c) Pour point
 - (d) Viscosity
 - (e) Calorific value
 - (f) Absorptivity
 - (g) Emissivity
 - (h) Thermal efficiency
 - (i) Albedo
 - (j) Irradiance.

- 11. What is pyrolysis ? Describe in brief different types of pyrolysis. 7**
- 12. Highlight few measures that can be used to save energy in the residential, commercial and industrial sectors. 7**
-