

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

**Term-End Examination**

**December, 2018**

00633

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

*Time : 3 hours*

*Maximum Marks : 70*

---

*Note : Attempt any five questions. All questions carry equal marks.*

---

1. (a) Explain the construction and working of a solar still with neat schematic diagram. 7
- (b) Describe the importance of ventilation in heating and cooling of buildings. 7
2. (a) Explain the construction and working of a solar street lighting system with a neat sketch. 7
- (b) What is pyrolysis ? Also explain the types of pyrolysis. 7

3. (a) Differentiate between passive, hybrid and active building systems. 7
- (b) How does a biogas plant work ? Also discuss the factors which affect the generation of biogas. 7
4. (a) Explain the concept of photovoltaic effect with a neat sketch. 7
- (b) Explain the following : 7
- (i) Diffuse radiation
  - (ii) Direct radiation
  - (iii) Global radiation
5. (a) Explain different steps for reducing greenhouse effect in nature. 6
- (b) Explain the following terms : 8
- (i) Flash point
  - (ii) Pour point
  - (iii) Calorific value
  - (iv) Viscosity

6. (a) What is an evacuated tube solar collector ?  
Also write the advantages of solar water  
heater over electric water heater. 8

(b) An ideal solar still of  $4 \text{ m} \times 0.5 \text{ m}$  dimension  
is placed where  $I(t)$  is  $800 \text{ W/m}^2$  and  
ambient temperature ( $T_a$ ) is  $25^\circ\text{C}$ .  
Determine the distillate output in kg. 6

7. Write short notes on any *two* of the  
following :  $2 \times 7 = 14$

- (a) Daylighting
  - (b) Green Building
  - (c) Solar Pond
-