

00295

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

Term-End Examination

June, 2012

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

Time : 3 Hours

Maximum Marks : 70

Note : question No. 1 is compulsory. Attempt any other five questions.

1. This question is compulsory. Discuss any four of the following: 4x5=20
- (a) Solar cooker
 - (b) Solar still
 - (c) Photo voltaic Effect
 - (d) Combustion
 - (e) Green House Effect
2. (a) Describe the functioning of natural circulation type of solar water heaters. 5+5=10
- (b) A solar collector has the following parameters : $I = 900 \text{ W/m}^2$, $\tau d = 0.8$, $U_L = 5 \text{ W/m}^2 - ^\circ\text{C}$, $T_i = 30^\circ\text{C}$, $T_a = 25^\circ\text{C}$, $F_R = 0.9$
- Calculate thermal efficiency of the collector.

3. (a) Describe the functioning of porous type of solar air collectors. **5+5=10**
- (b) Enumerate the major differences between solar water heaters and solar air heaters.
4. (a) Describe three basic types of solar cells and state their differences. **5+5=10**
- (b) What is green building rating system . Explain how this is determined.
5. (a) Explain the working of the fluidized bed combustion system. **5+5=10**
- (b) Describe the function and construction of storage type solar water heater.
6. (a) Discuss bio fuels and their characteristics.
- (b) Describe the importance of ventilation in heating and cooling of buildings. **5+5=10**
7. What is Global warming ? Discuss its effect on environment. **10**
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