

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

Term-End Examination

00778

June, 2016

**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) Define air mass. Why is it advisable to tilt a non-tracking solar system at an angle equal to the latitude angle ? 3+4=7
- (b) What is a solar still ? Explain its working with the help of a suitable diagram. 2+5=7
2. (a) Explain solar photovoltaic system. Also, write the advantages and limitations of photovoltaic systems. 3+2+2=7
- (b) Explain the construction and working of a solar street lighting system with a neat sketch. 7

3. (a) Draw a schematic diagram of a bio-gas plant and explain its working. 7
- (b) What is pyrolysis ? Also, explain the types of pyrolysis. 7
4. (a) Draw the block diagram of a solar drying system. Also, write the functions of each component. 7
- (b) Define and explain any *two* of the following with the help of an example : $2 \times 3 \frac{1}{2} = 7$
- (i) Payback period
- (ii) Capital recovery factor (CRF)
- (iii) Salvage fund factor (SFF)
- (iv) Fixed cost and Variable cost
5. (a) (i) Describe the importance of ventilation in heating and cooling of the buildings. 4
- (ii) Explain Trombe wall with a neat sketch. 3
- (b) Explain the different features of three main types of buildings. 7
6. (a) Describe the concentrating type of collector with its advantages and disadvantages. 7
- (b) Describe the solar pumping system with a neat sketch. 7

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

- (a) Solar Heating Systems
 - (b) Mix Mode Dryer
 - (c) Solar Pond
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