

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

**Term-End Examination**

**June, 2025**

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

*Time : 3 Hours*

*Maximum Marks : 70*

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

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1. Define any *five* of the following :      5×2=10
- (a) Emissivity
  - (b) Reflectivity
  - (c) Irradiation
  - (d) Solar constant
  - (e) Stefan-Boltzmann's law
  - (f) Direct Radiation

2. What is an evacuated tube solar collector ?  
Also write the advantages of solar water heater over electric water heater. 10
3. (a) What do you understand by 'efficiency of a solar cell' ? 5  
(b) Explain different steps for reducing green house effect in nature. 5
4. (a) Discuss the factors which affect the generation of biogas. 5  
(b) What are the components which are used in a box type solar cooker ? Draw a neat sketch of a box type solar cooker. 5
5. Describe the procedure for evaluating an energy-conscious design for a building. 10
6. What is Gasification ? Also classify biomass gasifiers. 10
7. Explain construction and working of natural circulation type of solar water heater. 10

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8. (a) Differentiate between hybrid and active building systems. 5
- (b) Describe the importance of ventilation in heating and cooling of buildings. 5
9. Write short notes on any *two* of the following : 2×5=10
- (a) Solar pond
- (b) Solar PV system for pumping
- (c) Solar passive cooling

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