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OEY–002

CERTIFICATE IN ENERGY TECHNOLOGY AND MANAGEMENT (CETM)

Term-End Examination

December, 2024

OEY–002 : RENEWABLE ENERGY TECHNOLOGIES AND THEIR USES

Time : 3 Hours *Maximum Marks : 70*

Note : *(i) Attempt any* ***five*** *questions.*

(ii) All questions carry equal marks.

1. (a) Explain principle of solar air heater. How is solar air heater classified ? 7

   (b) Describe the construction and working of a simple double effect solar still. 7

2. (a) Explain the construction and working of updraft or countercurrent gasifier. 7

   (b) How is the size of biogas plant estimated ? Explain with the help of an example. 7

3. (a) Describe Trombe wall and Mass wall with operable dampers with a neat schematic diagram. 7

   (b) Explain active solar water heater with heat exchanger. Also write the advantages of solar passive systems. 7

4. (a) Compare floating gas holder and fixed dome type biogas plant with a neat schematic diagram. 7

   (b) Explain solar drying system with the help of a neat block diagram. 7

5. (a) Describe greenhouse effect in detail. Also discuss the impact of greenhouse effect on environment. 6

   (b) Explain the following with respect to bio-oil : 2×4=8

   (i) Flash point

   (ii) Pour point

   (iii) Viscosity

   (iv) Calorific value

6. (a) What factors affect the efficiency of photovoltaic (PV) module ? Classify different types of photovoltaic power system on the basis of functional and operational requirements. 7

   (b) What are the different modes of heat transfer ? Explain each with example. 7

7. Write short notes on any *two* of the following : 7+7

   (a) SPV pumping system

   (b) Ventilation of building

   (c) Significance of Renewable Energy

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