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OEY-002

CERTIFICATE IN ENERGY TECHNOLOGY AND MANAGEMENT (CETM)

00265

Term-End Examination

December, 2014

OEY-002 : RENEWABLE ENERGY TECHNOLOGIES AND THEIR USES

Time : 3 hours *Maximum Marks : 70*

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

1. (a) Explain built-in-storage solar water heater with neat schematic diagram. 7

(b) Define the following terms : 7

(i) Direct radiation

(ii) Diffused radiation

(iii) Global radiation

2. (a) What are the key components of a solar photovoltaic system ? Describe the applications of solar photovoltaic. 7

(b) Explain the operation of solar lantern and solar street lighting system. 7

3. (a) What is pyrolysis ? Classify the types of pyrolysis. 7

(b) Name the different types of biogas plants. Describe the fixed dome biogas plant with neat sketch and indicate its application. 7

4. (a) Give merits and demerits of various drying techniques. 7

(b) Categorize the solar building systems. Also write main features of each. 7

5. (a) Define the following terms : $7 \times 1 = 7$

(i) Kirchhoff's Law of radiation

(ii) Solar constant

(iii) Payback period

(iv) Pickup efficiency

(v) Efficacy

(vi) Thermosyphon

(vii) Angle of incidence

(b) Draw the voltage-current characteristics of a solar cell. Write different factors on which the efficiency of a PV module depends. 7

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

(a) Green Building Design

(b) Solar Greenhouse

(c) Global Warming and its effect on environment