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OEY-002

CERTIFICATE IN ENERGY TECHNOLOGY AND MANAGEMENT (CETM)

Term-End Examination

00633

June, 2018

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) Explain in detail the main components of solar radiation falling on the Earth. 7

(b) State the Kirchhoff's law of radiation. How is solar radiation estimated on a horizontal surface ? 7

2. (a) What are the main components of a solar cooker ? Also write the advantages and disadvantages of a solar cooker. 7

(b) Explain construction and working of natural circulation type of solar water heater. 7

3. (a) Explain operation of a photovoltaic solar cell. Also draw I-V characteristics of a solar cell. 7

(b) Explain working of a solar PV system for pumping purpose with neat diagram. 7

4. (a) What is gasification ? Also classify biomass gasifiers. 7

(b) (i) Explain design features of cook stoves. 4

(ii) Write the pH value of bio-oil. 3

5. (a) Explain construction and working of Janata fixed-dome biogas plant with neat sketch. 7

(b) Explain the merits and demerits of open sun drying. Also, define moisture content on dry basis. 7

6. (a) How is cost-benefit analysis of solar drying system calculated ? Explain in detail. 7

(b) Explain solar drying system with neat schematic diagram. 7

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

(a) Trombe Wall

(b) Green Building

(c) Solar Still
