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OEY-001

CERTIFICATE IN ENERGY TECHNOLOGY AND MANAGEMENT (CETM)

Term-End Examination

June, 2015 00296

OEY-001 : ENERGY RESOURCES AND CONVERSION PROCESSES

Time : 3 hours *Maximum Marks : 70*

Note : *Answer any **seven** questions. All questions carry equal marks. Use of scientific calculator is permitted.*

1. Define the following : *10*

(a) Internal Energy

(b) Calorific Value

(c) Hydraulic Retention Time

(d) Specific Heat

(e) Low Grade Energy

2. List down the advantages and disadvantages of various known renewable energy sources. *10*

3. Determine the energy needed from different fuels (electricity, coal, natural gas and wood) to run a 60 W light-bulb for a year. *10*

Given :

Calorific value of wood = 14400 – 17400 kJ/kg

Calorific value of coal = 15000 – 27000 kJ/kg

Calorific value of natural gas = 43000 kJ/m^3.

4. List down the various process parameters affecting biogas production and explain any one of them. *10*

5. Name and describe the two different types of wind machines generally used. *10*

6. Explain the construction and working of a fuel cell along with its components. *10*

7. Describe the process of photoelectric energy conversion with a neat diagram. *10*

8. How do fossil fuels impact on the greenhouse effect ? Discuss in detail and state Kyoto Protocol. *10*

9. Explain in detail the significance of nuclear energy in the present scenario and also give its environmental impact. *10*
