

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

00125

**Term-End Examination**

**December, 2014**

**OEY-003 : ENERGY MANAGEMENT :  
AUDIT AND CONSERVATION**

*Time : 3 hours*

*Maximum Marks : 70*

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**Note :** Attempt any *ten* questions. All questions carry equal marks. Use of calculators is permitted. Assume suitable value, if required.

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1. What are the principles and the need of energy audit ? 7
  
2. Explain, in brief, the energy conservation in Steel industry. 7
  
3. Define the following : 7×1=7
  - (a) Calorific value
  - (b) Energy consumption
  - (c) Life cycle cost
  - (d) Relative humidity
  - (e) Renewable energy
  - (f) Waste heat
  - (g) Ballast

4. Name the various pressure, flow and speed measuring instruments and explain any one of them in brief. 7
5. Explain the energy conservation measures in transport. 7
6. Explain energy conservation by energy-efficient devices. 7
7. If 1200 fluorescent tubes of 40 W fitted with conventional chokes which consume about 14 W power, are replaced by 36 W tubes, calculate the energy saved and the payback period. Assume cost of electricity as ₹ 2/kWh. 7
8. The energy requirement for typical houses are 5 kWh and 15 kWh. The size of PV Panel is 5 kW. Determine the Life cycle cost per kWh where

S No.	System	Cost	Life
1	PV Panel	4 Lakh/kW	25 years
2	Inverter	50,000/kW	25 years
3	Battery	10,000/kW	5 years

9. Explain the future energy scenario in rural areas with IREP plan. 7
10. Discuss the methodology of Rural Energy Planning. 7
11. Explain the energy conservation measures in Lighting devices. 7

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

$$2 \times 3 \frac{1}{2} = 7$$

- (a) Solar PV Power
  - (b) Conservation in AC units
  - (c) Animal Power
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