

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

00712

Term-End Examination

December, 2011

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

Time : 3 hours

Maximum Marks : 70

Note : Attempt any ten questions. All questions carry equal marks. Use of calculator is permitted.

1. What is evaporative cooling ? Are evaporative coolers suitable for all climate ? Explain in detail. 7
2. What is Hygrometer ? Describe in brief the different types of hygrometer. 7
3. Why there is need for an energy audit ? Explain with the help of suitable examples. 7
4. Explain in brief the energy conservation measures in buildings. 7
5. A house is fitted with eight-lamps (each of 40 watt) and two fans each taking a current of 0.25 amperes. The energy is supplied at 220 volt. If the lamps are lighted for 3 hours a day and the fans work for 6 hours a day, calculate the bill for 30 days. The cost of energy is at the rate of Rs. 2/- per kWh. 7

6. Describe in detail the waste heat recovery system of flue gases. 7
7. The energy audit data for a steel company for a month is as follows : 7
Coal consumption = 84400 kg.
Electricity consumption = 50060 kWh
Steel production = 660 tonnes.
Calorific value of coal = 5750 kcal/kg.
Compute the specific energy consumption.
8. Discuss different types of energy efficient lighting devices. 7
9. Define the following : (*Any seven*) 7x1=7
(a) Capital cost
(b) Replacement cost
(c) Salvage value
(d) Power factor
(e) TDS
(f) Blow down losses
(g) Carpet losses
(h) LPG
(i) BIOGAS
(j) COP
10. Describe in detail, few fuel -efficient devices/ appliances to be used in rural areas for energy saving. 7

11. There are two energy conservation measures as described below : 7

Energy conservation measure -I. The equipment costs Rs 20,000, and Pays back Rs 25000 in two years.

Energy conservation Measures II :
The equipment costs Rs. 15000/- today and pays Rs 9000/- each year for two years.

If the interest rate is 9% determine the best alternative.

12. Describe in brief the future energy scenario with integrated Rural Energy Planning. 7
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