

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

Term-End Examination

December, 2016

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

Time : 3 hours

Maximum Marks : 70

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

1. (a) Explain briefly the need of energy audit. 7
- (b) Discuss the advantages and limitations of evaporative coolers as compared to air-conditioners. 7
2. (a) What is energy substitution ? State the energy conservation measures in lighting. 7
- (b) Discuss the various reasons for increased emphasis on energy conservation. 7

3. (a) Describe the heat loss associated with the flue gas. 7
- (b) Develop energy balance sheet for steel industry. 7
4. (a) Define the following terms : $2 \times 3 \frac{1}{2} = 7$
- (i) Efficiency
- (ii) Specific energy consumption
- (b) Discuss the significance of techno-economic analysis in energy audit. 7
5. (a) Explain the importance of awareness and training programme in IREP. 7
- (b) Explain life cycle cost as an energy conservation measure in brief. 7
6. (a) The estimated salvage value of a large capacity PVT solar water heater at the end of its lifetime of 20 years is ₹ 5,000. Determine its present worth for a discount rate of 10%. 7
- (b) How long will it take for money to double, if compounded annually at 10% per year ? 7

7. Write short notes on any *four* of the following :

$$4 \times 3 \frac{1}{2} = 14$$

- (a) Sankey Diagram
 - (b) Light Emitting Diodes
 - (c) Combustion Analyzer
 - (d) Animal Power
 - (e) Loading of Motors
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