

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

Term-End Examination

December, 2013

**OEY-001 : ENERGY RESOURCES AND
CONVERSION PROCESSES**

Time : 3 hours

Maximum Marks : 70

Note : *There are two sections, Section A and Section B.
Section A is compulsory. Attempt any eight questions
from section B.*

SECTION-A

(All questions are compulsory.)

1. Choose the most appropriate correct answer from the given alternatives. 7x1=7
- (a) Which of the following is non-renewable source of energy ?
- | | |
|------------|-------------|
| (i) Wind | (ii) Solar |
| (iii) Coal | (iv) Biogas |
- (b) In a resistive circuit, power factor is :
- | | |
|-----------|-----------|
| (i) Zero | (ii) One |
| (iii) Two | (iv) None |
- (c) Energy can be expressed as :
- | | |
|------------------|--------------|
| (i) Potential | (ii) Thermal |
| (iii) Mechanical | (iv) All |

SECTION-B

(Attempt *any eight* questions.)

3. Discuss the advantages of gaseous fuels over solid fuels. 7
 4. Discuss the importance of biogas in rural areas. 7
 5. Explain the energy conversion process in an automobile. 7
 6. Explain the wind energy utilization for water pumping and off grid power generation. 7
 7. Discuss and differentiate between Hydrogen and Fuel cells. 7
 8. What are biofuels ? Discuss their importance in Indian environments. 7
 9. Explain the laws of thermodynamics. 7
 10. Explain in detail combustion and combustion efficiency. 7
 11. A boiler has an hourly input of 50 kWh. Energy equivalent to 25 kWh is extracted and utilized for heating water. Determine the energy conversion efficiency. 7
 12. Discuss the environmental impact of fossil fuels. 7
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