

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

**Term-End Examination**

**December, 2022**

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

*Time : 3 hours*

*Maximum Marks : 70*

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

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1. Define the following : 5×2=10
  - (a) Biochemical Oxygen Demand
  - (b) Internal Energy
  - (c) High Grade Energy
  - (d) Power Factor
  - (e) Tidal Energy
  
2. Discuss in detail about any two of the conventional energy sources. 10
  
3. What are fossil fuels and how are they produced in nature ? Also, discuss their advantages and disadvantages. 10

4. Discuss in detail low, medium and high temperature solar collectors. 10
5. Explain in detail the classification of biomass resources. 10
6. Define Energy efficiency.  
A boiler has an hourly input of 30 kWh. Energy equivalent to 18 kWh is extracted and is utilised for heating water. Calculate the energy conversion efficiency. If another 9 kWh is extracted through a waste heat recovery system, determine the final conversion efficiency in this case. 10
7. Discuss in detail the scope of wind solar hybrid system. 10
8. Describe the construction and working of a fuel cell along with its components. 10
9. Write short notes on the following : 10
- (a) Nuclear Energy
  - (b) Geothermal Energy