

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

**Term-End Examination**

00182

**December, 2017**

**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 : 10
- (a) Specific Heat
  - (b) Internal Energy
  - (c) Power
  - (d) Convection
  - (e) pH Value
2. Name the different conventional energy resources and describe them in detail. 10

3. (a) What is the difference between Gross Calorific Value (GCV) and Net Calorific Value (NCV) ? 4
- (b) Describe proximate and ultimate analysis of coal. 6
4. What is Biomass ? Give the classification of biomass resources in detail. 10
5. Discuss the effect of moisture content, ash content and volatile matter on the gasification process of biomass. 10
6. How does a wind machine work ? Name the different types of wind machines. Explain 'capacity factor' and 'availability factor' with respect to a wind power plant. 10
7. (a) Discuss the laws of thermodynamics. 6
- (b) What are the characteristics of coke ? 4
8. What is Biodiesel ? Compare biodiesel fuel with diesel fuel in detail. Can biodiesel be used in an existing conventional diesel engine ? 10
9. Write short notes on the following : 10
- (a) Tidal Energy
- (b) Animal Power
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