

TED (15) – 5024

Reg. No.....

(REVISION — 2015)

Signature .....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2019

**ALTERNATIVE ENERGY SOURCES AND MANAGEMENT**

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Give examples of primary and secondary energy sources.
2. What do you mean by Declination ?
3. Give any four advantages of wind energy.
4. What is biodiesel ?
5. What are hot dry rock resources ?

(5×2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. What is energy audit ? Give its classification.
2. What are the different energy management techniques ?
3. Explain with sketch construction and working of solar flat plate collector.
4. Briefly explain the considerations while selecting a site for wind mills.
5. Define the terms :
  - (a) Pyrolysis
  - (b) Gasification
  - (c) Hydrogenation
6. What are the limitations of geothermal systems ?
7. Draw the neat sketch of MIID electricity generator cycle.

(5×6 = 30)

## PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

## UNIT — I

- III (a) What is energy conservation ? Explain different energy conservation techniques. 7  
 (b) With neat sketch explain about combined cycle system. 8

OR

- IV (a) Mention about the findings of World Energy Council about the energy scenario. 7  
 (b) What is cogeneration ? Explain with neat sketch. 8

## UNIT — II

- V (a) Define the terms :  
 (i) Hour angle (ii) Latitude (iii) Solar altitude 7  
 (b) Explain with neat sketch the principle of solar water pump system. 8

OR

- VI (a) With neat sketch explain about greenhouse effect. 7  
 (b) What are the limitations of solar energy ? 8

## UNIT — III

- VII (a) What are the advantages of wind energy ? 7  
 (b) With figure explain the working of horizontal axis wind mill. 8

OR

- VIII (a) Draw the process flow schematic for biodiesel production. 7  
 (b) Explain with figure the construction of biogas digester. 8

## UNIT — IV

- IX (a) Define the term MHD, briefly explain the applications of MHD. 7  
 (b) Explain with neat sketch the working principle of geothermal flash steam power plants. 8

OR

- X (a) What are the advantages and disadvantages of fuel cells ? 7  
 (b) Explain with sketch the working of  $H_2$ - $O_2$  fuel cell. 8