

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE --- OCTOBER, 2017

RENEWABLE ENERGY SOURCES

[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. List any two factors affecting bio digestion.
2. Enumerate geothermal resources.
3. Write the principle of conversion of solar radiation into heat.
4. List the classification of WEC system.
5. Enumerate the power converter used in wind energy applications. (5×2 = 10)

PART --- B

(Maximum marks : 30)

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

1. Describe briefly any three forms of non-conventional energy sources available in nature.
2. Explain the classification of biomass gasifiers.
3. Describe any one method of solar radiation measurements.
4. Describe Solar Cooker.
5. Explain the horizontal axis wind machine.
6. Explain the variable speed variable frequency scheme for wind power generation.
7. Explain the stand alone solar energy system. (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) Distinguish between dome type and drum type biogas plants. 8
 (b) Describe the open cycle ocean thermal energy conversion. 7

OR

- IV (a) List the classification of bio-gas plants. 7
 (b) Explain with neat sketch, the schematic layout of tidal power house. 8

UNIT --- II

- V (a) Describe solar distillation. 8
 (b) Explain the flat plate type solar collector. 7

OR

- VI (a) Describe the solar water heating system. 7
 (b) List the direct solar energy applications. 8

UNIT --- III

- VII (a) Describe the basic components of wind energy conversion system. 9
 (b) Explain Isovents and Isodynes. 6

OR

- VIII (a) Explain wind energy estimation. 8
 (b) Explain the environmental impacts of wind power generation. 7

UNIT --- IV

- IX (a) Explain with block diagram of solar PV system. 8
 (b) Describe the grid connected wind energy system. 7

OR

- X (a) Describe step up or boost convertor. 7
 (b) Describe the grid connected PV system. 8
