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TED (15) – 5035

(REVISION — 2015)

Reg. No. .....

Signature .....

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

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 biogas conversion technology.
2. Enumerate types of fuel cells.
3. List types of solar collectors.
4. List out any two scheme for wind power generation.
5. List two applications of photovoltaic systems. (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Explain the concept of ocean thermal power generation.
2. Describe solar furnace.
3. Describe the principle of wind energy conversion.
4. Explain the applications of wind energy.
5. Explain the vertical axis wind machine.
6. Describe step down or buck convertor.
7. Explain the stand alone wind energy system. (5×6 = 30)

Marks

PART — C

(Maximum marks : 60)

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

UNIT — I

III (a) With schematic diagram explain vapour dominated power plant. 9

(b) List the classification geothermal resources. 6

OR

IV (a) Describe the closed cycle ocean thermal energy conversion. 7

(b) Describe the magneto hydro dynamic power plant. 8

UNIT — II

V (a) Describe the solar space cooling system. 8

(b) List the merits and demerits of solar cooker. 7

OR

VI (a) Explain the solar water pumping system. 8

(b) Explain thermal electric conversion of solar energy. 7

UNIT — III

VII (a) Explain the merits and demerits of wind energy conversion. 8

(b) Explain the constant speed constant frequency scheme for wind power generation. 7

OR

VIII (a) Compare the horizontal axis wind turbine and vertical axis wind turbine. 8

(b) Explain the variable speed constant frequency scheme for wind power generation. 7

UNIT — IV

IX (a) Describe the concept of maximum power point tracking technique in PV system. 8

(b) Describe DC converter. 7

OR

X (a) Describe the block diagram of wind energy system. 7

(b) Describe the charge controller in PV system. 8