TED (15) – 5035

(REVISION — 2015)

Reg. No. RES · 3

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2018

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 four non conventional sources of energy.
2. Name the constituents of bio gas.
3. What is a diffused radiation ?
4. List applications of Wind Energy Conversion system.
5. State merits of PV system.

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Explain open cycle power generation using ocean thermal energy.
2. Describe any three bio gas conversion technologies.
3. Explain working of solar cell.
4. Discuss one application of solar pond.
5. List different schemes for electric power generation using Wind Energy Conversion system.
6. Describe constant speed constant frequency Wind Energy Conversion system.
7. Describe operation of buck converter with the help of schematic diagram.

(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) Describe conventional and non conventional sources of energy. 8

(b) Explain electrical power generation using tidal energy. 7

Or

IV (a) List advantages of dom and drum type Plants. 8

(b) Explain operation of Hydrogen - Oxygen fuel cell. 7

Unit — II

V (a) Describe commercial water heating. 8

(b) What is solar space heating ? 7

Or

VI (a) Explain focusing type solar collectors. 8

(b) List merits of solar energy. 4

(c) List devices working on solar energy. 3

Unit — III

VII (a) Explain Vertical Axis Wind Turbine. 8

(b) Discuss main effects of wind turbines on environment. 7

Or

VIII (a) Explain Horizontal Axis Wind Turbine. 8

(b) Describe variable speed variable frequency Wind Energy Conversion system. 7

Unit — IV

IX (a) Describe a grid connected Solar energy conversion system. 6

(b) Describe operation of boost converter with the help of schematic diagram. 9

Or

X (a) Describe a grid connected wind energy conversion system. 8

(b) Draw and explain the block diagram of solar PV for power generation. 7
