TED (15) – 5035

(REVISION — 2015)

Reg. No. .....

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 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 conventional sources of energy.
2. Define Pyrolysis.
3. What is a solar furnace ?
4. List classifications of Wind Energy Conversion system.
5. State functions of charge controller in 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 electrical power generation using tidal energy.
2. Describe MHD power generation.
3. Explain working of Pyrheliometer.
4. Explain thermo electric conversion of solar energy with the help of schematic diagram.
5. Describe necessity of wind energy storage.
6. State main considerations in selecting site for wind mill.
7. Describe operation of boost 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) Explain continuous and batch type biogas plants. 9

(b) List commonly used biogas plants in India. 6

OR

IV (a) Draw and explain the block diagram showing main components of fossil fuel cell system. 8

(b) Explain operation of Hydrazine fuel cell. 7

UNIT — II

V (a) Discuss classifications of solar collectors. 8

(b) What is a solar pond ? Explain its application. 7

OR

VI (a) With the help of neat sketch explain solar pumping system. 8

(b) Describe working of a solar distillation plant. 7

UNIT — III

VII (a) Explain block diagram showing main components of Wind Energy Conversion system. 9

(b) List demerits of Wind Energy Conversion system. 6

OR

VIII (a) Differentiate between Horizontal Axis Wind Turbine and Vertical Axis Wind Turbine. 8

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

UNIT — IV

IX (a) Describe a standalone Wind Energy system. 6

(b) Describe a grid connected Wind Energy system. 9

OR

X (a) Describe a standalone Solar Energy system. 8

(b) Describe a grid connected Solar Energy system. 7