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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2022

ALTERNATE ENERGY SOURCES AND MANAGEMENT

[Maximum Marks: **100**] [Time: **3** Hours]

PART-A

(Maximum Marks: **10**)

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

1. Define Renewable energy sources.
2. Define Primary Energy.
3. Define Zenith angle.
4. Define Biomass Gasification.
5. State the principle of MHD system. (5 x 2 = 10)

PART-B

(Maximum Marks: **30**)

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

1. List any six Energy Conservation Techniques.
2. Explain the importance of alternate energy sources.
3. Define a) Solar azimuth b) Altitude angle.
4. List any six considerations in selecting a site for wind mills.
5. Explain the working of a biomass digester with the help of a sketch.
6. Explain the Geo Thermal energy.
7. List the advantages and limitations of a fuel cell (5 x 6 = 30)

PART-C

(Maximum Marks: **60**)

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

UNIT – I

III. (a) Explain Combined cycle system using a simple sketch. (8)

(b) Briefly explain about energy audit. (7)

OR

IV. (a) Explain the need of alternate energy sources. (8)

(b) Explain reuse and recycling of waste. (7)

UNIT – II

V. (a) Explain briefly the principle of conversion of solar energy into heat and electricity. (8)

(b) Explain with sketch the Construction and working of a solar desalination plant. (7)

OR

VI. (a) Explain with sketch the Construction and working of a flat plate collector. (8)

(b) Explain the working of a solar Station. (7)

UNIT- III

VII. (a) Explain with sketch the Construction and working of horizontal axis wind mill. (8)

(b) Explain with sketch the bio diesel production. (7)

OR

VIII. (a) Explain the pyrolysis process. (8)

(b) Compare biomass with conventional fuels. (7)

UNIT - IV

IX. (a) Explain the working of a Magneto Hydro Dynamic power plant. (8)

(b) List any seven limitations of Geothermal energy. (7)

OR

X. (a) Explain the working of H2-O2 Fuel Cells. (8)

(b) Explain the working of a dry rock type Geo thermal Power plant. (7)

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