Seat No. | | | | | | |

2662

DBI1368

ELECTIVE - II
Energy Engineering
(New) (1315)

P. Pages : 2

Time : Three Hours **Max. Marks : 100**

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Solve **any two** bits from a, b, c.
5. Assume suitable data if necessary.
6. Use of non - programmable calculator is allowed.

UNIT - I

1. a) What are various energy resources ? **10**

b) Explain the principle of energy conservation with energy efficiency state its importance. **10**

c) What do you mean by energy management ? State the steps in energy management to be established in a manufacturing company. **10**

UNIT - II

2. a) What are the different types of solar radiations ? How are they measured ? Explain Angstrom pyrheliometer. **10**

b) Explain in detail flat plate collector with its applications. **10**

c) Explain the cylindrical parabolic collector with the related terms. **10**

UNIT - III

3. a) Describe in detail the passive method of solar space heating. **10**

b) Explain solar pond with its different working zones. **10**

c) Explain solar still. **10**

UNIT - IV

4. a) Describe the main considerations in selecting site for wind power generation. **10**

   b) Prove that in case of Horizontal Axis Wind turbine, maximum power can be obtained when exit velocity $=\frac{1}{3}$ rd of wind velocity and $P_{max} = \frac{8}{27} \rho A V^3$. **10**

   c) Compare floating Drum and Fixed Dome type biogas plant. **10**

UNIT - V

5. a) Give the main components of a tidal plant. Derive an expression for tidal range power. **10**

   b) Explain closed cycle OTEC plant. **10**

   c) Explain in detail Hot Dry Rock Resources. **10**

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