

22312

22223

3 Hours / 70 Marks

Seat No.

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- Instructions* –
- (1) All Questions are *Compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Attempt any FIVE of the following: **10****
- a) Define commercial energy sources.
 - b) List any four applications of solar energy.
 - c) List any two objectives of energy conservation.
 - d) Define direct and indirect cost with one example each.
 - e) List any two characteristics of balance sheet.
 - f) State importance of economics in market evaluation.
 - g) List any two places of oil reserves located in India.

P.T.O.

- 2. Attempt any THREE of the following: 12**
- a) Describe importance of clean energy technology.
 - b) Explain any hydrogen production method with neat diagram.
 - c) Describe any four duties and responsibilities of energy manager.
 - d) Describe factors affecting cost estimation. (any four)
- 3. Attempt any THREE of the following: 12**
- a) Describe various measures used to produce an energy policy.
 - b) Differentiate between gross and net calorific value.
 - c) Describe wind energy by considering factors like wind turbine, wind power.
 - d) Describe procedure used for energy audit. (any four)
- 4. Attempt any THREE of the following: 12**
- a) Illustrate benefits of hydrogen energy as a future energy.
 - b) Describe construction and working of solar water heater.
 - c) Explain construction and working of fixed roof biogas plant.
 - d) Classify energy audit and explain detailed energy audit.
 - e) Describe energy security in details.
- 5. Attempt any TWO of the following: 12**
- a) Describe law of demand and law of supply in detail.
 - b) Define insurance and explain benefits of insurance to society and nation.
 - c) A heat exchanger cost Rs. 50 lakhs is fabricated in India. The exchanger is estimated to have useful life of 10 years and a salvage value of Rs. 5 lakhs if the same unit is imported, it shall cost Rs. 150 lakh and would have an useful life of 20 years and a salvage value of 40 lakhs. Suggest the better option of among two options for purchase of heat exchanger. (I = 8% p.a.)

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[3]

Marks

6. Attempt any TWO of the following:

12

- a) Describe balance sheet with its characteristics and functions.
 - b) Describe payback method with its advantages and disadvantages.
 - c) Explain straight line method of calculating depreciation and state the factors affecting the depreciation
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