

Total No. of Questions : 12]

SEAT No. :

P2319

[4758] - 54

[Total No. of Pages :3

T.E. (Electrical)

ENERGY AUDIT & MANAGEMENT

(2008 Course) (303146) (Semester - II)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answers to the two sections should be written in separate books.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data, if necessary.*
- 5) *Use of logarithmic tables slide rule, mollier charts, electronic pocket calculator and steam tables is allowed.*

SECTION - I

Q1) a) Write a exhaustive note on energy scenario in India and across the globe. **[8]**

b) Give highlights of Electricity Act 2003. What are the provisions in act for power for every one. **[8]**

OR

Q2) a) What is energy security? Discuss various ways to secure our nation on energy front. **[8]**

b) Define term energy intensity. Explain significance of it. Also state importance of energy conservation. **[8]**

Q3) a) What is energy policy? What is the significance of energy policy? How this will help Organisation to save energy. **[9]**

b) Explain different avenues for demand control in management in Demand side management. State benefits of Demand Side Management. **[9]**

OR

Q4) a) What are desirable qualities of Energy Manager? State duties and responsibilities of Energy Manager. **[10]**

b) With suitable examples give structure of energy management division and energy committee. **[8]**

P.T.O.

- Q5) a)** Discuss steps in detailed energy audit. [8]
- b) Explain ABC analysis and data analysis relevant to energy audit. [8]

OR

- Q6) a)** Explain the format of energy audit report. Also state the importance of Executive Summary. [8]
- b) Compare detailed energy audit and preliminary audit. [8]

SECTION - II

- Q7) a)** A energy conservation project require initial investment of Rs. 1,00,000 at the beginning. The cash flow generated over five years are Rs. 20,000, Rs. 20,000, Rs. 30,000, Rs. 30,000 and Rs. 30,000 respectively. The sample discounting factors are 10% 12% and 14%. Calculate internal rate of return for above investment. [10]
- b) Explain following tariffs and how these are helpful for energy saving.[8]
- i) Apparent energy tariff
- ii) Time of day tariff

OR

- Q8) a)** Explain time value of money and criteria for financial appraisal of project. [9]
- b) Calculate NPV for following investment Capital cost Rs. 50,000, cash flows Rs. 5,000, Rs. 7,000, Rs. 9,000, Rs. 11,000, Rs. 15,000 and Rs. 20,000. Take discounting factor as 10%. Comment on your findings. [9]
- Q9) a)** What is cogeneration? Explain topping cycle in detail. Also state advantages of cogeneration. [8]
- b) Enlist energy saving options in lighting systems. [8]

OR

- Q10)a)** Discuss energy conservation measures in boiler and steam systems. [8]
b) Explain no cost options for energy savings in residential and commercial sector. [8]

- Q11)a)** Highlight findings of energy audit of T & D sector and enumerate suitable measures for reducing energy losses. [8]
b) Report energy saving recommendations after energy audit of foundry and steel mill. [8]

OR

- Q12)a)** Discuss energy audit report of sugar industry. [8]
b) Identify energy saving opportunities during energy audit of commercial building and IT industry. [8]

