[Total No. of Questions - 9] [Total No. of Printed Pages - 2]

Dec-25-0229

CE-610 (Energy Efficient Buildings)

B.Tech. 6th (CBCS)

Time : 3 Hours **Max. Marks : 60**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all, selecting at least one question each from Unit I, II, III and IV. Unit V is compulsory.

UNIT - I

1. Explain how a building could act as an environment filter. What are the specific design guidelines for the thermal performance of buildings? (10)

2. What is the principle governing the design of Green building? What strategies are being used under it for various zones and how will you evaluate the energy required by a building? (10)

UNIT - II

3. Explain how the principle of Sunpath diagram can be used to design buildings. (10)

4. What are "Energy-efficient air conditioners"? How are they installed with the right size and efficiency? (10)

UNIT - III

5. How shall you gather and analyse the data pertaining to energy audit of a building? Also, summarize the key findings that could be analysed from the energy audit. (10)

6. On what basis will you prioritize the energy-conservative measures of an industry? Explain in detail. (10)

UNIT - IV

7. Explain the concept of energy management of electrical equipment and its importance in building design. (10)

8. What measures can be adopted to improve the energy savings in pumps, fans with compressed air systems and lighting system? (10)

UNIT - V (Compulsory)

9. Write briefly:

   (i) Green house effect.

   (ii) Evaporative cooling techniques.

   (iii) Orientation of buildings.

   (iv) PV system.

   (v) Smart building.

   (vi) Benefits of conducting energy audits.

   (vii) Acoustical quality improvement in building.

   (viii) Peak demand of energy.

   (ix) Solar radiations.

   (x) Waste management. (10×2=20)