Reg. No. : | | | | | | | | | | | | |

Question Paper Code: U1207

B.E. / B.Tech DEGREE EXAMINATION, NOV 2024

Professional Elective

Civil Engineering

21CEV207 ENERGY EFFICIENT BUILDINGS

(Regulations 2021)

Duration: Three hours | Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1.	Define: Thermal comfort.	CO1- U
2.	List the application of shading devices in a building.	CO3- App
3.	What is meant by Sunspace?	CO1- U
4.	Analyse the advantages of Convective Air loops.	CO2- Ana
5.	What is meant by Daylighting in a building?	CO1- U
6.	List the Application of radiant barriers in the building with a neat sketch.	CO3- App
7.	Define: Orientation of a building.	CO1- U
8.	Analyse the benefits of stack effect ventilation in a building.	CO2- Ana
9.	List any few building materials facilitates energy efficiency in building.	CO1- U
10.	List the applications of Wind Catchers in Warm-Humid Climates.	CO3- App

PART – B (5 x 16= 80 Marks)

11.	(a)	Apply the principles of energy conservation in design of a residential building in Composite Climate Zone.	CO4- App	(16)
		Or		
	(b)	Apply the principles of energy conservation in design of a residential building in Tropical upland Climate Zone.	CO4- App	(16)

12.	(a)	Explain about the principles of "Passive Solar Heating" with suitable examples. Illustrate with neat sketches.	CO1- U	(16)
		Or		
	(b)	Explain in detail about Courtyards and Atriums with suitable examples. Illustrate with neat sketches.	CO1- U	(16)
13.	(a)	Apply the principles of day lighting in a residential building and detail out the salient features of materials used in construction of a building in Hot-Dry Climate.	CO3- App	(16)
		Or		
	(b)	Apply the principles of day lighting in a residential building and detail out the salient features of materials used in construction of a building in Warm-Humid Climates.	CO3- App	(16)
14.	(a)	Analyse the Design and Detailing of Openings in Hot-Dry Climates with respect to ventilation. Illustrate with neat sketches.	CO4- Ana	(16)
		Or		
	(b)	Analyse the Design and Detailing of Openings in Composite Climates with respect to ventilation. Illustrate with neat sketches.	CO4- Ana	(16)
15.	(a)	Apply the Design Consideration of buildings in Warm-Humid Climates in terms of Form & Planning and External Spaces with suitable examples.	CO2- App	(16)
		Or		
	(b)	Apply the Design Consideration of buildings in Warm-Humid Climates in terms of detailing of Roof, Walls and Opening with respect to Lighting and Ventilation with suitable examples.	CO2- App	(16)