CBCS SCHEME

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18ARC33

Third Semester B.Arch. Degree Examination, Dec.2023/Jan.2024
Climatology

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Draw sketches wherever necessary.

Module-1

1 Explain "Graphical representation of climate data" (climate graph) and its components taking as example of warm humid climate. **(20 Marks)**

OR

2 a. Explain the factors that affect the urban climate. **(10 Marks)**

b. Describe the Earth and Sun relationship. Explain the cause for the change of seasons. **(10 Marks)**

Module-2

3 a. Explain the Sun Path (Solar chart) diagram with a neat sketch and label all the contents of the chart. **(10 Marks)**

b. Explain solar azimuth and solar altitude angles with help of sketches. **(10 Marks)**

OR

4 Describe the heat exchange process of a building with the outside environment. **(20 Marks)**

Module-3

5 Write short notes on :

a. Transmittance values **(05 Marks)**

b. Cavity resistance **(05 Marks)**

c. Surface conductance **(05 Marks)**

d. Time-lag **(05 Marks)**

OR

6 Find the U-value for the composite wall of a Westerly, normal exposure, consisting of the following :

114mm Engineering brickwork	k = 1.150 W/m deg C
50mm cavity	R_c = 0.176 m^2 deg C/W
100mm dense concrete blocks	k = 1.440 W/m deg C
25mm wood wool slab	k = 0.093 W/m deg C
12mm Plastering	k = 0.461 W/m deg C
Surface resistance	$1/r_0$ = 0.076 m^2 deg C/W
	$1/r_i$ = 0.123 m^2 deg C/W

(20 Marks)

Module-4

7 List and describe the types of shading devices. Explain the steps involved in the design of shading devices. **(20 Marks)**

OR

8 a. Explain the air flow around single storey buildings in rural setting in open country. **(10 Marks)**

b. Write short notes on : i) Wind Scoop ii) Wind Simulators **(10 Marks)**

Module-5

9 What are the sources of day lighting? Explain the Day light factor in detail. **(20 Marks)**

OR

10 Explain the design considerations for buildings in hot-dry climate. **(20 Marks)**

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