CBCS SCHEME

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21ARC33

Third Semester B.Arch. Degree Examination, Dec.2025/Jan.2026
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 List the major Climatic zones of India along with their characteristics and design strategy. **(20 Marks)**

OR

2 Write short notes on the following :
i) Thermal Balance of the Human Body
ii) Bioclimatic chart
iii) Mean Radiant Temperature
iv) IMAC Model **(20 Marks)**

Module-2

3 Explain use of Psychrometric chart and demonstrate how any particular point moves in the chart for evaporative cooling. **(20 Marks)**

OR

4 Draw and explain a sun path diagram for any city located on the equator. Also illustrate how this changes if the city is located in the north of southern hemisphere. **(20 Marks)**

Module-3

5 Compare the construction techniques for improving thermal performance of walls and roof in hot and dry climate and warm and humid climate. **(20 Marks)**

OR

6 Write short notes on the following :
i) Thermal conductivity
ii) Specific heat
iii) Resistance
iv) Time lag. **(20 Marks)**

Module-4

7 a. Describe the different type of shading devices with relevant sketches. **(10 Marks)**

b. Design appropriate shading device for west façade where azimuth is 280° and altitude is 38° and window is 1500 × 1800 mm. **(10 Marks)**

OR

8 a. What is Stack effect? Explain the various parameters that affect stack ventilation. **(10 Marks)**

b. Explain any two passive cooling techniques and the appropriate climatic zone of usage. **(10 Marks)**

Module-5

9 a. What is day light factor and illustrate the various components of day light factor. **(10 Marks)**

b. What are some of the ways to optimize day light inside a building. **(10 Marks)**

OR

10 Explain the design consideration for hot and dry climate using a case study as an example. **(20 Marks)**

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