

USN

| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|

Third Semester B.Arch. Degree Examination, June/July 2023 Climatology

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Enlist the elements that constitute climate and mention their tools. Elaborate on any one of the element in detail. (10 Marks)
- b. Highlight the interrelation between human built environment and the natural environment with respect to architectural interventions. (10 Marks)

OR

- 2 a. Enlist the thermal indices. Explain Bioclimatic chart in detail with the help of a diagram and state its use. (10 Marks)
- b. Highlight the climate crisis faced over time along with the impact and responsibility now upon the profession of Architecture. (10 Marks)

Module-2

- 3 Explain thermal exchange between a building with outdoor environment. (20 Marks)

OR

- 4 a. Explain Sunpath diagram components with an illustration and state its use. (10 Marks)
- b. Elaborate the steps required to design a shading device on a wall. (Consider a certain wall orientation) (10 Marks)

Module-3

- 5 a. Explain periodic heat flow with regards to time lag and decrement factor. Draw all necessary illustrations. (12 Marks)
- b. Write short notes on : (08 Marks)
 - (i) U value.
 - (ii) Conductance

OR

- 6 a. Calculate U value of a composite west wall. The wall assembly and wall exposure are to be assumed and the steps to be illustrated without actual calculations. (12 Marks)
- b. Write short notes on : (08 Marks)
 - (i) Earth tunnels
 - (ii) Trouble wall

Module-4

- 7 a. Explain the different types of shading devices used in buildings with detailed illustrations. (12 Marks)
- b. Elaborate the functions of natural ventilation and air movement. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

- 8 a. Explain the effect of openings on airflow with respect to their positioning, sizes and details. (10 Marks)
- b. Write short notes on :
- (i) Wind catchers.
 - (ii) Cross ventilation (10 Marks)

Module-5

- 9 a. With neat sketches, explain design considerations for warm and humid climate for a residence. (12 Marks)
- b. Write short notes on:
- (i) Glare control.
 - (ii) Daylight factor. (08 Marks)

OR

- 10 a. Explain how to design a climate responsive office building for hot and dry climate. (12 Marks)
- b. Explain daylight factor and its components and its use in architectural spaces. (08 Marks)

* * * * *