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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 :
(i) U value.
(ii) Conductance (08 Marks)

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 :
(i) Earth tunnels
(ii) Trouble wall (08 Marks)

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)
