

# CBCS Scheme

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15ARC3.3

Third Semester B.Arch. Degree Examination, June/July 2018

## Climatology

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Define climate, tropical climate and site climate. (08 Marks)  
b. Explain with sketches, urban climate, the four factors causing deviations from the regional microclimate and its impact on urban climate. (12 Marks)

OR

- 2 a. With neat sketch explain human body's heat production and heat loss. Also explain importance of thermal balance of human body. (10 Marks)  
b. Explain with an example, usage of Corrected Effective Temperature (CET) and bio-climatic chart for thermal comfort assessment. (10 Marks)

### Module-2

- 3 a. Explain with sun path diagram, its components and method of computing solar altitude and Azimuth for given date and time. (10 Marks)  
b. Explain utility of sun path diagram/solar chart for orienting and spacing of buildings for reducing heat gain. (10 Marks)

OR

- 4 a. Explain the concept of sol-Air temperature and solar gain factor with formulae and suitable examples of building material. (14 Marks)  
b. Explain convection as a type of heat flow and its effect on built enclosures. (06 Marks)

### Module-3

- 5 Explain thermal conductivity (K-value) thermal capacity and thermal transmittance (U-value) with section of multi-layered wall. (20 Marks)

OR

- 6 Explain steady state, periodic heat flow, time lag and decrement factor. (20 Marks)

### Module-4

- 7 Define functions of natural ventilation and air movement. Explain its utilization in warm-humid climates by illustrating plans and sections. (20 Marks)

OR

- 8 Explain overheated period, shading marks and the process steps of shading design. (20 Marks)

### Module-5

- 9 a. Explain North lighting with illustrations. (10 Marks)  
b. Illustrate the use of courtyard for daylighting in a spread out building. Also explain the daylight components. (10 Marks)

OR

- 10 Illustrate with sketches "design principals" for buildings in hot dry as compared with warm humid climates. (20 Marks)

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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.