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Third Semester B.Arch. Degree Examination, June/July 2014
Climatology

Time: 3 hrs.

Max. Marks:100

Note: 1. Answer any FIVE full questions.
2. Illustrate your answers with figures and graphs.

- 1 a. Explain “graphical representation of climatic data” (climate graphs) and its components taking an example of warm humid climate. (12 Marks)
b. What is the importance of graphical representation of climate data for climatic design? (08 Marks)
- 2 a. Explain “site climate” and “microclimate”. (06 Marks)
b. List and describe the local factors causing local climatic deviation of the elements of site climate (i.e. air temperature, humidity, precipitation, solar radiation, air movement and driving rain). (14 Marks)
- 3 a. Explain “Thermal comfort scale” and “Corrected effective temperature” (CET). (12 Marks)
b. Explain “Bioclimatic chart” and its application for climatic design. (08 Marks)
- 4 a. Explain thermal capacity, U value and thermal diffusivity. (09 Marks)
b. Explain methods and construction techniques for improving thermal performance of walls and roofs. (11 Marks)
- 5 a. What are the functions of natural ventilation? (04 Marks)
b. What is cross ventilation? (08 Marks)
c. How does position of openings, size of openings and control of openings with canopies and louvers effect internal air flow? (08 Marks)
- 6 a. Illustrate and explain sun path diagram by labeling solar altitude, solar azimuth, equinox and solistice positions and time of the day. (06 Marks)
b. List and explain steps for designing and sizing solar shading device for south – east facing wall for complete shading from the sun exposure.
Note: Calculation is not required, only design steps and diagrams to be illustrated with formulae for sizing. (14 Marks)
- 7 a. Explain Day light factor and its components. (08 Marks)
b. What are the challenges in providing adequate day lighting in warm humid climates and ways of overcoming them. (12 Marks)
- 8 Write short notes on:
a. Temperature inversion.
b. Condensation.
c. Solar gain factor.
d. Kata thermometer. (20 Marks)

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