

Total Pages—3

(Set-Q₁)

B.Arch.-3rd
Climatology

Full Marks : 70

Time : 3 hours

Q. No. 1 is compulsory and answer any **five** questions out of the remaining seven questions

The figures in the right-hand margin indicate marks

Draw neat sketches wherever necessary

1. Answer the following questions : 2 × 10

- (a) List out the elements of climate.
- (b) Define thermal conductivity of different building materials.
- (c) Define 'glare'.
- (d) What information can we get from solar charts?
- (e) What is meant by 'desiccant cooling'?
- (f) Mention the classification of tropical climates.

(Turn Over)

(2)

- (g) What is meant by 'micro-climate' ?
- (h) Define 'thermal time-lag' of building components.
- (i) What is the function of air-movement and ventilation ?
- (f) How wind velocity and wind direction are measured ?
2. (a) Discuss about the global pressure belts affecting the climate. 5
- (b) Highlight the characteristics of hot-dry climate with example of cities. 5
3. (a) Discuss about the body heat balance mechanism and thermal comfort of humans. 5
- (b) Briefly explain how the heat flow through roof of building will be calculated. 5
4. (a) Compare between sun angles and shadow angles ? 5
- (b) How the external shading device should be designed for low-rise buildings ? 5

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(Continued)

(3)

5. (a) Explain the factors affecting air-movement through the buildings. 5
- (b) Show the application of 'stack-effect' in buildings for natural ventilation. 5
6. (a) Write short notes on 'evaporative cooling' of buildings with examples ? 5
- (b) Give examples how landscape elements can be used to create cooling effect on site ? 5
7. (a) Discuss about the design considerations for warm-humid climate with example. 5
- (b) Discuss any method of graphic representation of climate data. 5
8. (a) How the optimum orientation of building should be done for sun and wind ? 5
- (b) With examples discuss how topography can affect the climate condition of a place ? 5

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BE-100