

2013

Environmental Science

Paper : 3.8

Full Marks : 100

Time – 3(Three hours)

The figures in the margin indicate full marks for the questions

- A. (Each question carries 2 marks each) 2×10=20
(Answer any ten)
What do you mean by:
1. Climatology
 2. Meso climate & Macro Climate
 3. Fenestration
 4. Egg Crate Devices
 5. Temperature inversion
 6. Climate Responsive Architecture
 7. Humidity
 8. Light shelves & Flywire nets
 9. Solar radiation
 10. Urban climate
 11. Bio-climate chart
 12. Time lag (\emptyset) & Decrement factor (μ)
 13. Ground character
- B. (Each question carries 5 marks each) 5×6=30
(Answer any 6)
1. What do you mean by solar Azimuth angle & Solar Altitude angle?
 2. What is Sun Path Diagram and how is solar chart used in climatic design?
 3. What do you mean by natural ventilation?
Explain the function of natural ventilation?
 4. Explain the effect of courtyards & verandas in building design w.r.t. Hot Climate, Cold Climate & Humid Climate?

(2)

5. What are the two Atmospheric factor which dominantly influence Human Comfort? Explain?
6. What do you mean by Micro Climate? Explain the effect of Landscape elements on Micro Climate?
7. Explain the heat exchange processes of a building.
8. What do you mean by Kata Thermometer & Globe Thermometer.

C. (Each question carries 10 marks each)
(Answer any five)

5×10=50

1. What are the major climate zones in India and what are their classifications?
2. How is Earth's thermal balance obtained? What are the three processes by which earth's surface releases heat?
3. What do you mean by thermal comfort? Explain the process of body's heat exchange with the surrounding environment?
4. What are the various local factors Governing the climate of a zone? Elaborate & Explain.
5. What is shadow angle? How many types of shadow angle are there and how is it used to design shading device?
6. What do you mean by Daylight factor concept? What are the three components of Daylight factor? Explain.
7. Explain the design considerations for building in tropical climates with special reference to hot-dry or warm-humid or composite climates