

*Fourth Semester Diploma Examination in Architecture*  
*October 2012*

CLIMATOLOGY

Maximum marks:-100

Time:- 3 hours

**PART - A**

Marks

I. Answer the following questions in one or two sentences. Each question carries 2 marks.

1. Define climate.
2. What is coriolis force?
3. Give reason for cold condition in winter season.
4. Describe evaporative cooling.
5. What is the general nature of composite climate?

(5 x 2 = 10)

**PART - B**

II. Answer any *five* of the following questions. Each question carries 6 marks.

1. Describe the process of earth's thermal balance.
2. What is the significance of tilt of earth's axis in the formation of climates?
3. Explain the subjective variables for thermal preferences of individuals.
4. Explain periodic heat flow and time lag between environment and building.
5. Draw the schematic diagram of an air conditioning system for buildings.
6. Distinguish between stack effect and wind effect for ventilation.
7. Formulate the form and planning of building in composite climatic regions. (5 x 6 = 30)

**PART - C**

(Answer one full question from each unit. Each question carries 15 marks)

Unit - I

- III (a) Explain the elements of climate. (8)  
(b) Compare the climatic conditions existing on the northern and southern hemispheres on the globe in the same period. (7)

Or

- IV (a) Describe phenomenon of temperature inversion. (6)  
(b) Explain the factors affecting local climates. (6)  
(c) List down the factors affecting urban climate. (3)

Unit - II

- V (a) Illustrate thermal balancing mechanism of human body. (5)  
(b) Define (i) Temperature (ii) Specific heat  
(iii) latent heat (iv) Thermal capacity (10)

Or

- VI (a) Explain the process of heat exchange in buildings. (8)  
(b) Draw a schematic Bio-climatic chart and give its use. (7)

Unit - III

- VII (a) Explain the problems related to heating of interiors of buildings. (6)  
(b) Distinguish between air cooling and air conditioning. (5)  
(c) What are the types of controlling systems used in air conditioning? (4)

Or

- VIII (a) Write notes on shading devices for openings in buildings. (8)  
(b) What is the importance of cross ventilation? (4)  
(c) Define wind shadow. (3)

Unit - IV

- IX (a) Formulate the type of surface treatment given to roof and wall of buildings in Warm-humid area. (6)  
(b) Draw a typical layout of residential building with court yard for warm-humid climatic region. (9)

Or

- X (a) What are the physiological objectives of climatic design of buildings in hot-dry climatic regions (8)
- (b) Draw the layout of a traditional building in hot dry area indicating special features (7)

