

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE – APRIL -2019.

CLIMATOLOGY

(Maximum Marks : 100)

[Time : 3 hours]

PART-A
(Maximum marks: 10)

Marks

I. Answer **all** questions in one or two sentences. Each question carries 2 marks.

1. What is meant by climate?
2. Define solar constant.
3. What is meant by metabolism?
4. Define solar altitude angle.
5. List any two features of the roof of a building suitable for warm humid climate.

(5x2=10)

PART - B
(Maximum Marks : 30)

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

1. What causes seasonal changes on earth?
2. Explain the characteristics of warm humid climate.
3. Explain the local factors affecting site climate.
4. Explain any six subjective variables influencing human comfort.
5. Briefly explain the working of a domestic refrigerator.
6. Explain the working of a wind scoop with a neat sketch.
7. Explain the traditional shelters found in hot dry climates.

[5x6 =30]

PART - C
(Maximum marks : 60)

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

UNIT I

- III (a)** Explain climatic elements namely (i) Air temperature (ii) solar radiation
(iii) Humidity.

(15)

OR

- IV** (a) Explain the factors causing deviations of urban climate from the regional macroclimate. (8)
- (b) Explain with schematic sketches how earth attains thermal balance. (7)

UNIT- II

- V** Briefly explain human body's heat production and heat loss processes and how it attains thermal balance. (15)

OR

- VI** (a) Define: (i) Thermal capacity (ii) Solar gain factor
(iii) Effective temperature (iv) Conductivity (8)
- (b) Give the thermal balance equation for a building and explain the terms. (7)

UNIT- III

- VII** Explain air flow around buildings with neat sketches. (15)

OR

- VIII** (a) What are the different types of mechanical ventilation systems? Explain them. (8)
- (b) What are the different types of external shading devices? Explain. (7)

UNIT – IV

- IX** (a) What are the design features of a shelter suitable for hot dry climate? (8)
- (b) Explain the design of external spaces in composite climate. (7)

OR

- X** (a) Explain the form and planning of buildings in warm humid climate. (8)
- (b) Enumerate the design features of shelters suitable for tropical upland climate. (7)
