

## MANIPAL UNIVERSITY

THIRD/FOURTH SEMESTER B. ARCH. DEGREE EXAMINATION – NOVEMBER 2017

SUBJECT: ARC-14-211 : PRINCIPLES OF CLIMATIC DESIGN (2014 SCHEME)  
ARC-214 : CLIMATOLOGY (2010 SCHEME)

Saturday, November 18, 2017

Time: 14:00 – 17:00 Hrs.

Max. Marks: 50

✍ Answer any FIVE FULL questions.

✍ Support your answers with sketches wherever required.

1A. What is meant by microclimate? Explain the effect of landform, vegetation and street width on altering microclimate.

1B. Explain in detail the factors affecting urban climate.

(5+5 = 10 marks)

2A. Explain the characteristics of Hot and Dry climate and its effect on thermal comfort.

2B. Explain the influence of design strategies over cold climate zone.

(5+5 = 10 marks)

3A. Explain in detail - Horizontal shading device and vertical shading device.

3B. Explain psychrometric chart with a neat diagram indicating each of its components.

(4+6 = 10 marks)

4A. Give recommendations for orientation of buildings along with details of fenestrations and shading devices in Warm Humid climate.

4B. What is meant by solar azimuth angle and wall azimuth angle?

(6+4 = 10 marks)

5A. What is meant by passive design?

5B. Explain the following advanced passive techniques in detail:

i) Trombe wall

ii) Water edges

iii) Roof Pond

iv) Wind Towers

(5 marks × 2 = 10 marks)

6A. What is Ecotect? What are the good features of Ecotect?

6B. What are the output you derive from the Ecotect software?

(5+5 = 10 marks)

