

MANIPAL ACADEMY OF HIGHER EDUCATION**THIRD/FOURTH/FIFTH SEMESTER B. ARCH. DEGREE EXAMINATION – JAN/FEB 2019****SUBJECT: ARC-14-211 : PRINCIPLES OF CLIMATIC DESIGN (2014 SCHEME)
ARC 307 : CLIMATOLOGY (2007 SCHEME)**

Saturday, February 09, 2019

Time: 14:00 – 17:00 Hrs.

Max. Marks: 50

- ✍ Answer any FIVE FULL questions.
- ✍ Answer all parts of a question.
- ✍ Give sketches wherever relevant.

- 1A. Which are the various climatic elements that a designer should be aware of?
1B. How are the various climatic elements measured and represented?

(3+7 = 10 marks)

- 2A. What do you mean by the term urban climate? How does urban climate differ from the surrounding country side?
2B. What do you understand by the term daylighting? Why is it important?

(5+5 = 10 marks)

- 3A. What is meant by ventilation? What are its objectives? Explain how the patterns of air movement in a room get modified by the position and size of openings.
3B. Explain the climatic design guidelines for Hot-dry desert climate.

(5+5 = 10 marks)

- 4A. Explain the concept of sol-air temperature. Give the expression for calculating it.
4B. What is solar gain factor? How is it important?
4C. What do you understand by the term U-value? How is it important?

(4+3+3 = 10 marks)

- 5A. "The apparent path of the sun keeps changing throughout the year". Explain.
5B. Enlist the six thermal comfort factors. Elaborate how these factors effect human comfort in warm and humid climate.

(5+5 = 10 marks)

- 6A. Discuss the heat exchange of buildings. Explain each of the heat exchange methods.
6B. What do you understand by wind tunnel effect? Explain with help of sketches.

(6+4 = 10 marks)

