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Total No. of Pages : 01

Total No. of Questions : 09

**B.Architecture (2012 & Onwards) (Sem.-4)****CLIMATE AND SUSTAINABILITY-I****Subject Code : BACH-406****Paper ID : [A2255]****Time : 3 Hrs.****Max. Marks : 60****INSTRUCTION TO CANDIDATES :**

1. Question no. 1 is compulsory.
2. All question carry **EQUAL** marks except question no. 1.
3. Attempt any **FIVE** questions including compulsory question with minimum one question from each **UNIT**.

**1. Write short notes on the following :**

- a) Cross ventilation.
- b) Thermal Units.
- c) Design Builder software.
- d) ECBC.
- e) Shading devices.

**UNIT-I**

2. Discuss in air movement within and around the building with respect to the opening variables.
3. Discuss in detail the form and placement of building with respect to wind movement for ventilation.

**UNIT-II**

4. Discuss in detail the study of various landscape elements to be used for buildings with respect to solar radiation.
5. Discuss in detail the movement of sun and method of recording of solar radiation.
6. Discuss in the concept of solar radiation and also explain the solar radiation gain by various materials.

**UNIT-III**

7. Discuss in detail the design principles of sustainable buildings.
8. Discuss in brief the GRIHA rating system in India.
9. Discuss any two energy saving techniques in India.