

**M. Arch. Sem-I (Sustainable Architecture) (CBCS 2018 Course) :**  
**SUMMER - 2019**  
**SUBJECT : ENERGY CONSERVATION – I (Thermal Environment)**

Day : Wednesday  
Date : 08/05/2019

**S-2019-3746**

Time : 02.00 PM To 04.00 PM  
Max. Marks : 60

---

**N.B.:**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Draw neat and labeled diagram **WHEREVER** necessary.
  - 4) Answers to both the sections should be written in **SEPARATE** answer book.
- 

**SECTION – I**

- Q.1** Write short notes on **ANY TWO** of the following: **[10]**
- a) Wind rose
  - b) Conduction and Convection for heat transfer
  - c) Sun-Dial
- Q.2** Attempt **ANY TWO** of the following: **[10]**
- a) Explain with a case study of architectural precedent carried out on various scale.
  - b) Explain topographic micro climates.
  - c) Heat transfer through glazing solar gain.
- Q.3** Attempt **ANY ONE** of the following: **[10]**
- a) Bioclimatic chart in detail.
  - b) Site microclimate (steps of calculation).

**SECTION – II**

- Q.4** Write short notes on **ANY TWO** of the following: **[10]**
- a) Permeable Buildings
  - b) Solar Envelope
  - c) Green Edges
- Q.5** Attempt **ANY TWO** of the following: **[10]**
- a) Explain passive strategies of natural ventilation used at various scales.
  - b) Net positive buildings.
  - c) “Evaporative cooling” as a strategy for cooling.
- Q.6** Attempt **ANY ONE** of the following: **[10]**
- a) Explain Zoned organization by using Buffer zone and stratification zone as tool.
  - b) Make strategy bundle for building envelope in cold climate.

\* \* \* \*