MASTER OF ARCHITECTURE (SUSTAINABLE ARCHITECTURE) (CBCS - 2018 COURSE)

M. Arch. (S.A.) Semester-I : WINTER : 2021

SUBJECT: ENERGY CONSERVATION-I (THERMAL ENVIRONMENT)

Day : Monday | Time : 10:00 AM-12:30 PM

Date : 03-01-2022 | **W-19772-2021** | Max.Marks 60

N.B:

1) Solve any **THREE** questions from each section.
2) Answer to both the sections should be written in **SEPARATE** answer book.
3) All questions carry **10 MARKS**.

SECTION-I

Q.1 Define or describe the following terms: **(10)**

a) Sun Dial **b)** Altitude angle **c)** Wind rose diagram

d) Sensible heat **e)** Resistance

Q.2 Explain short notes on the following: **(10)**

a) Solar envelope

b) Interwoven buildings and planting

Q.3 Describe the following with sketches: **(10)**

a) Locating Outdoor Rooms

b) Cross ventilation

Q.4 Long question: **(10)**

Compare various passive design strategies and create a bundle of a building to be designed in hot and dry climate.

Q.5 Long question: **(10)**

Explain the procedure and steps involved in calculating heat gains in a building.

SECTION-II

Q.6 Define or describe the following terms: **(10)**

a) Convection **b)** Solar gain factor

c) Thermal comfort indicators **d)** Bioclimatic chart

e) Air movement principles

Q.7 Explain short notes on the following: **(10)**

a) Migration

b) Overhead shades

Q.8 Describe the following with sketches: **(10)**

a) Sunspaces

b) Wind catchers

Q.9 Long Question: **(10)**

Analyse any traditional settlement (building) of warm and humid climate and derive strategies at all scales (Building group, Building, component)..

Q.10 Long Question: **(10)**

Explain the procedure and sizing of stack ventilation.

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