

PARUL UNIVERSITY
FACULTY OF ARCHITECTURE & PLANNING
B.Arch./ B.ID Summer 2018-19 Examination

Semester: 3**Subject Code: 01101205****Subject Name: Architecture & Environment - III****Date: 01/04 / 2019****Time: 02:00 pm to 04:00 pm****Total Marks: 50****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever required.
4. Draw suitable sketches wherever required.

Q.1 Explain how different materials help in enhancing climate sensitivity of a design. Give illustrations from 'Hot & Dry' climate and 'Cold & Dry' climate. Explain with reference to the thermal properties of materials and architectural design implications. **(10)**

Q.2 Attempt any five out of the following six: **(20)**

- 1) Fill in the blanks:
 - a) _____ is the ability of a material to transfer the heat.
 - b) _____ is the combination of all direct and indirect sunlight.
 - c) _____ is the ability of a material to absorb and store heat energy.
 - d) _____ is the process of keeping heat, sound or electricity from spreading.
 - e) _____ is the interval of time between two related phenomena.
- 2) Explain Active Cooling techniques with sketches.
- 3) Explain the concept of Psychometric Chart and its relationship with architecture
- 4) Describe in detail horizontal and vertical shading devices with appropriate sketches.
- 5) Write a Short Note on Light and its Behavior.
- 6) Define the following: (any four)
 - a) Trombe Wall
 - b) Solar Chimney
 - c) Temperature measurements & Temperature Data
 - d) Thermal Mass
 - e) Thermal Inversion

Q.3 Answer the following (any five) **(10)**

- 1) Enlist Design guidelines for Hot& Dry Climate.
- 2) Difference between active and passive cooling techniques.
- 3) Explain the types of ventilations.
- 4) Sun-path diagram as a climate analysis tool.
- 5) Enlist Design guidance for Cold and Dry Climate.
- 6) Enlist Design guidance for Warm Humid Climate

Q.4 Explain the following: (any two) **(10)**

- 1) Explain different climatic zones with sketches and write design considerations for each zone.
- 2) Describe the elements of climate and explain how each one is measured. Also specify the unit of measurements.
- 3) Write a short Note on : 'Day Lighting Strategies' in Architecture.