

**PARUL UNIVERSITY**  
**FACULTY OF ARCHITECTURE**  
**B.Arch., Winter 2019-20 Examination**

**Semester: 3****Date: 11/12/2019****Subject Code: 01101205****Time: 10:00 am to 12:00 pm****Subject Name: Architecture & Environment - III****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** Enlist and explain daylight and its principles. **(10)**

**Q.2** Answer briefly (Attempt any 5)

a. Define:

- i. Angle of azimuth
- ii. Altitude
- iii. Ecology
- iv. Conduction

b. Explain with necessary sketches.

- i. Evaporative Cooling
- ii. Earth Air Tunnel

c. Explain in detail. **(20)**

- i. Explain the concept of windrose.
- ii. Describe the elements of climate.

d. Explain with necessary sketches.

- i. Stereographic Sun-path diagram
- ii. Sundial diagram

e. Differentiate with necessary sketches.

- i. Internally Reflected Light & Externally Reflected Light
- ii. Difference between day light and artificial light.

f. Explain Ventilation and its design strategies.

**Q.3** Write a short note on the following (Attempt Any 5)

a. Transmission of Light

b. Driving Rain

c. Sun Solar Radiation **(10)**

d. Precipitation

e. Absolute humidity & Relative humidity

f. Types of Reflection

**Q.4** Answer the following: (Attempt any 2)

a. What is total comfort? Explain body heat exchange process and the subjective variables for body heat exchange. **(10)**

b. Enlist design guidelines with appropriate sketches for 'Hot & Dry' climate.

c. Enlist and explain with sketches of various Passive heating techniques.