

GUJARAT TECHNOLOGICAL UNIVERSITY
B.ARCH. - SEMESTER-III EXAMINATION – WINTER 2015

Subject Code: 1035005**Date: 08/12/2015****Subject Name: Environmental Science****Time: 10:30am to 12:30pm****Total Marks: 50****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** What should be taken care for designing walls, roof and floor for cold climate. And what special features can be used to make design climate responsive for cold climate. **05**
- (b)** Differentiate characteristics of hot-dry, warm-humid and composite climate. **05**
- Q.2 (a)** Explain following terms with necessary diagrams (Any 5): **05**
1. Humidity
 2. Solar window
 3. Solar chimney
 4. Azimuth Angle
 5. Altitude Angle
 6. Conduction
 7. Convection
- (b)** How rotation of earth around the Sun and tilted axis of earth affects temperature differences and wind pattern of earth? **05**
- OR**
- (b)** Differentiate wind tunnel and wind tower. **05**
- Q.3 (a)** List down Elements of climate and explain measuring tools for temperature. **05**
- (b)** What is 'Wind Shadow' and how does it generate? **05**
- OR**
- Q.3 (a)** Explain Mahoney table and its use. **05**
- (b)** Explain following ventilations: **05**
1. Single sided ventilation
 2. Cross ventilation
 3. Mechanical ventilation
- Q.4 (a)** Explain Dual Nature (two different forms) of Light. **05**
- (b)** Explain Munsell System for classification of surface light **05**
- OR**
- Q.4 (a)** Explain Reflection, Absorption and Transmission of light. **05**
- (b)** What are advantages and disadvantages of daylighting? **05**
- Q.5** How climate responsiveness in architecture affects social, economical and ecological sustainability. **10**
- OR**
- Q.5** Explain any two examples of vernacular architecture which are sensitively designed for climate. **10**
