

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,
LONERE - RAIGAD -402 103
End Semester Winter Examination - DEC. - 2019**

Branch: B.Arch (First Year Architecture)

Semester: I

Subject: ENVIRONMENTAL SCIENCE I (AR10100004)

Marks: 60

Date: 06/12/2019

Time: - 3 Hours

Instructions: - 1. ALL QUESTIONS are compulsory
2. Draw proper sketches wherever necessary.

Q. No.1:- Answer the following

(1 x 15M = 15 Marks)

Explain the characteristics of hot and dry climate, cold and cloudy and composite climate.

Q. No. 2:- Answer the following any THREE

(3 X 5M = 15 Marks).

1. Define solar altitude angle and solar azimuth angle with proper sketches.
2. Explain STACK VENTILATION with proper sketches.
3. Explain with proper sketches URBAN HEAT ISLAND EFFECT.
4. Write a note on thermal insulation.

Q. No. 3:- Answer the following in detail any TWO(2 X 10M = 20 Marks).

1. What do you understand by ventilation and write about importance of ventilation.
2. How to read a BIO CLIMATIC chart, explain it with sketches.
3. Write a note on lighting with the help of following points.
 - a. Daylight
 - b. Sources of daylight.
 - c. Need of Daylight.
 - d. Advantages of Daylight.

OR

Q. No. 3:- Answer the following in detail any TWO

(2 X 10M = 20 Marks).

1. Explain any three factors affecting airflow through the building.
2. What do you understand by solar shading and explain with sketches any two types of solar shading devices.
3. Explain with proper sketch EARTH SUN relationship and the distribution of radiation through atmosphere.

Q. No.4:- Write Short Notes on (Any 5)

(5 x 2M = 10 Marks)

1. List of Koppen's classification of Climate.
2. Name any four elements of climate.
3. Define Horizontal Shadow Angle
4. Enlist FOUR climatic variables that are considered in plotting a BIO CLIMATIC CHART.
5. Explain in short "CONVECTION"
6. Explain in short "TROPOSPHERE"
7. State the formula for calculating conduction heat flow rate (Q_c)

-----THE END-----