

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL  
UNIVERSITY, LONERE - RAIGAD -402 103  
Mid Semester Examination - October - 2017**

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**Branch: B.Arch (First year)**

**Sem.:- I**

**Subject with Subject Code:- Environmental Science -1  
(AR 1010005)**

**Marks:20**

**Date:- 02/11/2017**

**Time:- 1 Hr.**

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**Instructions:-**

- 1. Read all the questions carefully.**
- 2. Neat sketches must be drawn wherever necessary.**
- 3. Figures to the right indicate full marks.**

**Q.1 Attempt any one of the following**

**(10 Marks)**

**a) Explain various elements of climate, describe any four elements in detail with sketches.**

Answer:

**various elements of climate-** Temperature, Humidity, Solar Radiation, precipitation, Sky condition, Wind, Vegetation.

**any four elements**

Temperature- Definition/ Description, Units, Tools of measurements, five values of temperature, relevant sketches

Humidity- Definition/ Description, Units, Tools of measurements, types of humidity, relevant sketches

Solar Radiation- Definition/ Description, Units, Tools of measurements, Quantitative and qualitative, relevant sketches

Precipitation- Definition/ Description, Units, Tools of measurements, different forms of precipitation(snow, hail, etc.) values of precipitation, relevant sketches

Sky condition- Description, expressed as, values of sky condition (octets)

Wind- Definition/ Description, Units, Tools of measurements, Prevailing and secondary winds, relevant sketches

Vegetation- types of vegetation (evergreen, seasonal), types of plants in different climate zones

**b) Explain human body's heat exchange process and thermal balance of the body in detail with sketches.**

Answer:

body's heat production, thermal balance of body with sketch, heat gain and loss factors (conduction, convection and radiation), subjective variables, relevant diagram

**Q.2 Write short notes on (Any Five)**

**(2X5=10 Marks)**

**a) Stack ventilation**

Answer- description, concept in short and sketch

**b) Factors of Psychrometric Chart**

Answer- dry & wet bulb temperature, relative humidity, dew point, humidity ratio, specific enthalpy

**c) Solar altitude and azimuth angle**

Answer- definition and sketch

**d) Bio-climatic chart**

Answer- definition, factors and sketch

**e) Functions of ventilation**

Answer- supply of fresh air, convective cooling, physiological cooling with short explanation

**f) Factors of environment affecting building form**

Answer- landform, vegetation, ground character, water body, surroundings (streets and open spaces with short explanation

**g) Global wind pattern**

Answer- short description, polar and trade winds, sketch.