



BOWEN UNIVERSITY (Of the Nigerian Baptist
Convention) IWO

College of Environmental Science (COEVS)

SECOND SEMESTER EXAMINATION, 2023/2024
DEPARTMENT OF ARCHITECTURE
ARC 214: BUILDIGN CLIMATOLOGY (2 UNITS)

INSTRUCTION: There are 6 questions. Answer no 1 & 2, with any other two questions.

TIME ALLOWED: 2 hours, 15 minutes.

USE WELL LABELED DIAGRAM(S) WHERE APPLICABLE

WARNING: Please note that you are not allowed to bring mobile phone(s) into the examination hall. Non-compliance will amount to examination misconduct and attract stiff penalty.

1. a) Briefly explain five components of the climate system? [10 marks]
b) Highlight bioclimatic design strategies suitable for a climate zone of your choice in Nigeria [10 marks]
2. a) Which weather elements are considered in building climatology [10 marks]
b) Create the bioclimatic chart for a location of your choice in Nigeria [10 marks]
3. a) What is thermal comfort? [5 marks]
b) Describe the factors that affect thermal comfort in humans [10 marks]
4. a) What do you understand by Bioclimatic chart and Mahoney tables? [10 marks]
b) Identify some of the passive design strategies in buildings [5 marks]
5. a) What do you understand about the Koppen system of climate classification [5 marks]
b) Using relevant illustrations, describe wind pressure and stack effect process of achieving ventilation in buildings [10 marks]
6. a) What do you understand by microclimate [5 marks]
b) Describe and illustrate principles of solar control in buildings [10 marks]