

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF ARCHITECTURE AND QUANTITY SURVEYING

DEPARTMENT OF ARCHITECTURE
BACHELOR OF ARCHITECTURAL STUDIES (HONOURS) DEGREE

PART II FIRST SEMESTER EXAMINATIONS – JANUARY 2004
AAR 2104 ENVIRONMENTAL DESIGN I

Instructions

Time : 3 Hours

Answer *Question 1* and any other *three* of the remaining questions.
Illustrate your answers with sketches and diagrams where appropriate.

QUESTION 1 - Compulsory

On the attached sheet are five climate graphs, for cities in each of five main climatic zones. Using the letters under each graph, in your answer book, answer the following questions:

- i) What climatic zone does the climate graph represent?
- ii) What are the principal climatic characteristics of the city, as evident from the climate graph? [25]

QUESTION 2

Explain and describe how buildings and their immediate surroundings modify the local climate. Use the NUST Administration Building as an example. [25]

QUESTION 3

What is thermal comfort? how can this be maintained in buildings designed for Zimbabwean cities? [25]

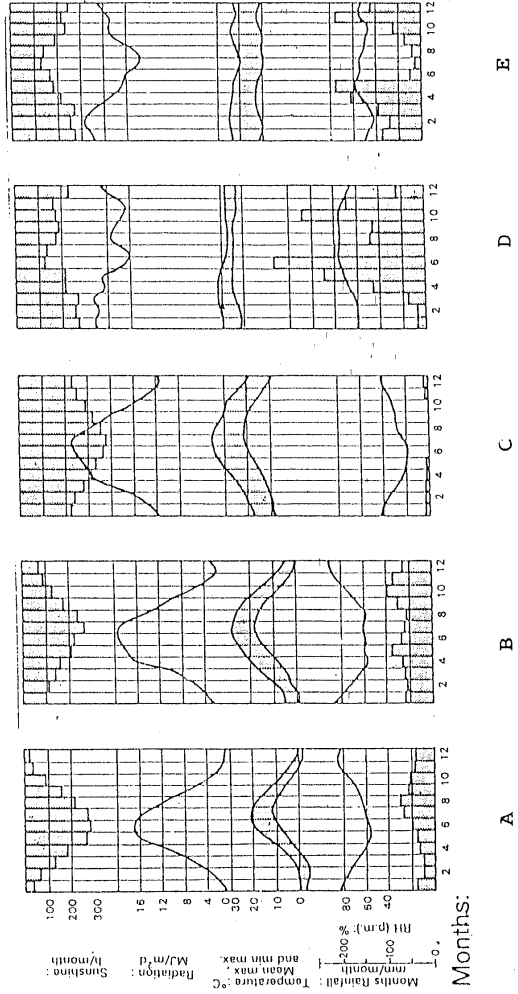
QUESTION 4

What are the principal functions of ventilation?
In what ways can an architect ensure sufficient natural ventilation to all parts of a building, and at the same time keep out rain, dust and excessive solar radiation? [25]

QUESTION 5

What are the principal benefits of daylight in buildings?
In what ways can an architect ensure that adequate, but not excessive, levels of daylight are provided to all habitable parts of a building? [25]

ENVIRONMENTAL DESIGN - AAR 2104 - QUESTION 2



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