

TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ARCHITECTURE & BUILT ENVIRONMENT

COURSE: DIPLOMA IN ARCHITECTURE

UNIT: BUILDING ENVIRONMENT SCIENCE (THERMAL DESIGN)

UNIT CODE: EAR 2203

SPECIAL / SUPPLEMENTARY EXAMINATION

SERIES: SEPTEMBER 2017

INSTRUCTIONS TO CANDIDATES:

THIS PAPER CONSISTS OF FIVE QUESTIONS. ANSWER ANY THREE QUESTIONS. MAXIMUM MARKS FOR EACH PART OF A QUESTION ARE AS SHOWN.

QUESTION ONE

Explain how you would use climate as a strategic design parameter with respect to comfort and energy consumption. (20 Marks)

QUESTION TWO

Explain human thermal comfort as an essential function of a building envelope. (20 Marks)

QUESTION THREE

Explain the incorporation of the effect of solar radiation on site analysis. (20 Marks)

QUESTION FOUR

Describe the following (20 Marks)

- a) Human Thermal Comfort
- b) heat loss
- c) Comfort zone
- d) Bioclimatic chart

QUESTION FIVE

Critically explain the requirements for Ventilation and Air movement within a building complex (20 Marks)