



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY

Department of BUILDING & Civil engineering

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN ENVIRONMENTAL HEALTH

EBC4350: CONSTRUCTION AND BUILDING TECHNOLOGY

END OF SEMESTER EXAMINATION

SERIES: JANUARY 2025

TIME: 2 HOURS

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **five** questions.

Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

QUESTION ONE (COMPULSORY) 30 Marks

- a) Outline the functions of the following parties in the construction industry;
 - i) The client,
 - ii) The Architect,
 - iii) The Structural engineer,
 - iv) The Quantity surveyor,
 - v) Statutory and regulatory bodies.(12marks)
- b) Outline the functions of a contractor, subcontractors and specialist subcontractors, in a construction of a project. (6marks)
- c) Outline the factors to consider in organisation the site layout. (12marks)

Question TWO, (20marks)

- a) Outline the following types of soils and their suitability to foundation construction;
 - i) Peat, alluvial soils,
 - ii) Cohesive soils and non-cohesive soils

- iii) Hard murrum and rocks. (9marks)
- b) With the aid of suitable sketches outline the construction of the following types of foundations;
 - i) Narrow strip,
 - ii) Wide strip (11marks)

Question THREE, (20marks)

With the aid of suitable sketches outline the construction of the following types of foundations stating where they are ideally applied;

- i) Rafts,
- ii) Raft with up stand beams,
- iii) Pad foundations,
- iv) Bored Pile foundations
- v) P.C.C driven pile foundations.

Question FOUR, (20marks)

- a) Briefly describe the dry process of the manufacture of ordinary Portland cement. (12marks)
- b) Explain the significance of fineness of grinding of cement in its strength properties. (4marks)
- c) Discuss the setting properties of cement. (4marks)

Question FIVE, (20marks)

- a) Outline the following properties of materials;
 - i) Specific gravity,
 - ii) density,
 - iii) Thermal conductivity,
 - iv) Thermal transmittance
 - v) Modulus of elasticity,
 - vi) Compressive strength (10marks)
- b) Explain the effects of the following in deformation and movement of building materials;
 - i) Crystallization of salts,
 - ii) Sunlight,
 - iii) Loss of volatility,
 - iv) Biological agencies. (10marks)