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 ANDBUILDING 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. (4marks0
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)