



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF ARCHITECTURE & BUILT ENVIRONMENT

UNIVERSITY EXAMINATION FOR:
DIPLOMA IN QUANTITY SURVEYING
EQS 2205: BUILDING ECONOMICS I
SPECIAL/SUPPLEMENTARY EXAMINATION
YEAR TWO, SEMESTER TWO

SERIES: JULY 2025

TIME: 2 HOURS

DATE: JULY, 2025

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)**

- (b) Distinguish between a “feasibility study” and a “feasibility appraisal.” (5 marks)
- (a) Explain FIVE main focus areas that you would consider when undertaking a feasibility study of a proposed solar power plant in Garashi, Kilifi County. (20 marks)
- (c) Highlight FIVE benefits of building economics. (5 marks)

QUESTION TWO**(15 marks)**

Identify any FIVE design variables and explain how they affect the estimated cost of a proposed construction project. (15 marks)

QUESTION THREE**(15 marks)**

A property development company has purchased land for KES 50 million and proposes to develop 240 housing units on the outskirts of Mombasa City. Each housing unit has a plinth area of approximately 100 square metres, and the estimated rate of construction per square metre is KES 30,000 excluding external works. External works will be carried out for KES 7.2 million.

All finances are obtained from a bank at a 15.5% compound interest rate per annum, while the developer expects to earn a profit margin of not less than 20% from the sale of the housing units.

The professional consultants engaged in the project will collectively charge a total of 15% of the cost of construction; while the approval, permitting and project registration fees will cost the developer 0.50% of the cost of construction. The housing units take 24 months to be ready for occupation/sale.

Calculate the development cost for this project. (15 marks)

QUESTION FOUR**(15 marks)**

Discuss FIVE approximate estimating methods and their application in a construction project. (15 marks)

QUESTION FIVE

(15 marks)

Yala Limited, a successful building and civil engineering contractor in Machakos, is considering purchasing a new plant to replace the existing one to improve their technical capacity for construction work. The following cash flow information relates to two plant options that they need to consider before deciding to purchase one. Their discount rate is 12.5% per annum.

	Year 0	Year 1	Year 2	Year 3	Year 4
Plant A	21	9	9	9	9
Plant B	31	12	11	12	12

Using the Net Present Value (NPV) method, advise Yala Limited on the best plant to purchase. (15 marks)