



MACHAKOS UNIVERSITY
University Examinations for 2021/2022 Academic Year
SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF BUILDING AND CIVIL ENGINEERING
THIRD YEAR FIRST SEMESTER EXAMINATION FOR
BACHELOR OF SCIENCE (PUBLIC HEALTH)
HPH 307: BUILDING CONSTRUCTION AND TECHNOLOGY

DATE: 25/8/2022

TIME: 2.00-4.00 PM

INSTRUCTIONS:

- *This paper comprises of FIVE questions. Answer **THREE** questions*
- *Questions one is **Compulsory** and carries 30 marks*
- *Answer any other **TWO** questions*

QUESTION ONE (30 MARKS)

- a) Describe the properties of the following construction materials based on physical, density and specific gravity properties.
- i. Glass
 - ii. Rubber
 - iii. Plastic (5 marks)
- b) State and explain FIVE physical consideration on selection of a building site (5 marks)
- c) Outline FIVE conditions to consider when choosing type of foundation (5 marks)
- d) Discuss FIVE characteristics of a good external walls (5 marks)
- e) Project tendering a is process. Briefly describe tender process starting from tender opening to tender award (10 marks)

QUESTION TWO (20 MARKS)

- a) Define Galvanization (2 marks)
- b) Define the term rusting and corrosion of steel and explain their prevalent methods (5 marks)
- c) Outline THREE advantages and TWO disadvantages of a flat roof (5 marks)
- d) Describe FOUR important characteristics of a good timber to be used in construction works (8 marks)

QUESTION THREE (20 MARKS)

- a) Define the term setting out of a building (4 marks)
- b) State and explain FOUR advantages of timber scaffolding (8 marks)
- c) With an aid of sketches, describe FOUR types of foundations (8 marks)

QUESTION FOUR (20 MARKS)

- a) Define the term 'Building codes' (4 marks)
- b) State and explain THREE Statutory bodies involved in the approval of engineering project drawings in Kenya before implementation phase. (6 marks)
- c) Outline FIVE main functions of the Kenya National Bureau of Standards (KeBS). (10 marks)

QUESTION FIVE (20 MARKS)

- a) Define the term Tender evaluation (2 marks)
- b) Briefly outline FOUR common causes that may lead to termination of a building or civil project contract (8 marks)
- c) A bill of quantities is one of the main documents in a construction project. Briefly state and explain FIVE major importance of a priced Bill of quantities in the implementation of a project. (10 marks)