



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

HPH 208: BUILDING MATERIALS

DATE: 31/5/2022

TIME: 8.30-10.30 AM

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) Define the following terms as used in building construction.
- Building settlement
 - Built environment
 - Superstructure
 - Frame structure
 - Construction defects (5 marks)
- b) State and explain FIVE physical considerations on selection of a building site. (5 marks)
- c) Outline FIVE purposes of soil investigation in construction works. (5 marks)
- d) Discuss FIVE characteristics of a good building stone. (5 marks)
- e) With aid a diagram describe manufacture of cement by dry process. (10 marks)

QUESTION TWO (20 MARKS)

- a) State FIVE considerations for choice of construction materials. (5 marks)
- b) Define the term rusting and corrosion of steel and explain their prevalent methods.(5 marks)
- c) Describe FIVE important characteristics of a good timber to be used in construction works. (10 marks)

QUESTION THREE (20 MARKS)

- a) Define the term Reinforced Cement Concrete (4 marks)
- b) State and explain advantages of using a Prestressed concrete (8 marks)
- c) Describe manufacture of Ferrocement and give its advantages (8 marks)

QUESTION FOUR (20 MARKS)

- a) Describe FIVE methods of Stone quarrying. (10 marks)
- b) Discuss properties of the following building materials.
 - i. Glass
 - ii. Lead
 - iii. Plastics
 - iv. Lime
 - v. Copper(10 marks)

QUESTION FIVE (20 MARKS)

- a) Define stone (1 mark)
- b) Explain the following durability tests of a building stone.
 - i. Smith test
 - ii. Brard's test
 - iii. Acid test
 - iv. Crystallization test(10 marks)
- c) Discuss THREE important types of rocks and their formations. (9 marks)