



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2019/2020
FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
CONSTRUCTION MANAGEMENT

BCM 201: CONSTRUCTION MATERIALS & TESTING

DATE: MONDAY, 9TH DECEMBER, 2019

TIME: 2.00 P.M. - 4.00 P.M.

INSTRUCTIONS: Answer Question ONE and any other TWO.

1. (i) Define concrete in construction (3 marks)
- (ii) Describe the role of each of the following components of concrete. (9 marks)
 - (a) Cement
 - (b) Coarse aggregates & fine aggregates
 - (c) Water and admixtures
- (iii) Briefly explain the FOUR properties of fresh concrete. (8 marks)
- (iv) Define mix design concrete in construction. (4 marks)
- (v) State SIX ways of transportation of concrete on site. (6 marks)
2. (i) Define the following properties of materials (10 marks)
 - a. Plasticity
 - b. Elasticity
 - c. Density
 - d. Porosity
 - e. Hardness
 - f. Optical
 - g. Electrical
 - h. Thermal
 - i. Acoustic
 - j. Deterioration
- (ii) State TWO advantages of timber as a construction material (2 marks)

- (iii) Explain the manufacturing process of the following **TWO materials**.
- (a) Bricks (3 marks)
 - (b) Stones (5 marks)
3. (i) Elaborate **THREE** types of concrete field tests in construction. (12 marks)
- (ii) Illustrate **FIVE** types of timber defects. (5 marks)
- (iii) Describe **THREE** uses of steel in construction in buildings. (3 marks)
4. (i) State **FIVE** characteristics of a good paint. (5 marks)
- (ii) State **FIVE** defects of paint after application (5 marks)
- (iii) Briefly explain **TWO** methods of timber seasoning (4 marks)
- (iv) Outline **SIX** common properties of other metals a part ^{from} steel as building materials. (6 marks)
5. (i) Outline the use of other metals apart from steel in construction of buildings. (4 marks)
- (ii) State how metal corrosion is developed as a natural process and the methods of protection. (6 marks)
- (iii) Describe the process of welding of metals in construction. (8 marks)
- (iv) State the properties of aluminum as a construction material (2 marks)