



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

((A Constituent College of JKUAT)

(A Centre of Excellence)

**Faculty of Engineering
& Technology in Conjunction with
Kenya Institute of Highways and
Building & Technology (KIHBT)**

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

HIGHER DIPLOMA IN CONSTRUCTION

(BUILDING ECONOMICS OPTION)

EBE 3302: CONSTRUCTION TECHNOLOGY & SERVICES IV

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*
- *Calculator*
- *Drawing Instruments*

This paper consists of **FIVE** questions

Answer any **THREE** questions

All questions carry equal marks
This paper consists of **TWO** printed pages

Question One (20 Marks)

- a) (i) Explain **THREE** preventive measures against termite attack on a building during construction.
(ii) Define the term ‘maintenance’ **(8 marks)**
- b) (i) Explain the purposes of ‘maintenance surveying and reporting’ in institutional buildings.
(ii) An external wall to a building has been earmarked for repainting under a routine maintenance programme. Outline the procedure for repainting the wall. **(12 marks)**

Question Two (20 marks)

- a) Briefly explain any **FOUR** factors which contribute to the deterioration of buildings. **(8 marks)**
- b) (i) A tiled timber pitched roof has been scheduled for a routine inspection. Explain **THREE** main items of the roof that would be inspected.
(ii) State **THREE** factors to be considered when selecting ‘over roofing’ as a solution to building maintenance problem. **(12 marks)**

Question Three (20 marks)

- a) Briefly explain the following:
i) Fire-resistance of building elements
ii) Fire-protection of building elements. **(8 marks)**
- b) Briefly explain the following fire tests.
i) Fire propagation test
ii) Non-combustibility test
iii) Ignitability test **(6 marks)**
- c) Briefly explain the **THREE** essentials to all fires. **(6 marks)**

Question Four (20 marks)

- a) Briefly explain the use of compartments in building design in preventing spread of fire from one area to another. **(6 marks)**
- b) Describe the **FOUR** main methods for protecting structural steel work from fire. **(8 marks)**
- c) (i) State the **THREE** main aims of fire protection design in buildings.
(ii) State a suitable method for enhancing fire protection performance of timber framed building. **(6 marks)**

Question Five (20 marks)

- a) (i) State the **THREE** main aims of fire protection design in buildings.
(ii) Briefly explain the principles of water sprinklers in controlling a fire outbreak in a building. **(12 marks)**
- b) Briefly explain the following methods of building.
i) System building

ii) Component building

(8 marks)