MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)
University Examinations for 2014/2015

SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

EXAMINATION FOR CERTIFICATE II IN MASONRY II

1304/314: MASONRY THEORY

Date: 16/03/2015 **Time: 2:00 – 5:00 pm**

Instructions:

- *You should have the following for this examination*
  - *Answer booklet*
  - *Scientific Calculator*
- *This paper comprises of **Eight** questions*
- *Answer any **Five** questions. All questions carry equal marks*
- *Maximum marks for each part of a question are as shown*

1 a) i) State two functions required of a foundation (2 marks)

ii) Sketch and label the timbering of deep foundation in;

- Loose-dry soil
- Firm wet soil (10 marks)

b) State two reasons for providing a concrete cover in reinforced concrete work (2 marks)

c) With the aid of a labeled sectional sketch show how a ½ hour fire resistance may be provided to suspended timber floor (6 marks)

2 a) State four factors that may be considered when designing retaining walls (4 marks)

b) i) Define the following terminologies in buildings

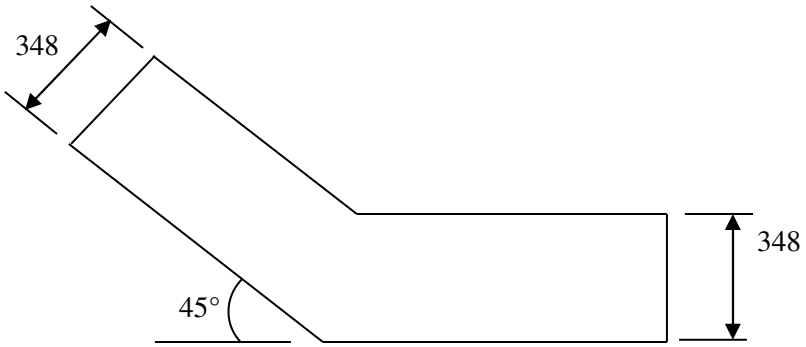
- Back gutter
- Chimney (3 marks)

ii) With the aid of a sketch, explain the construction of a chimney. (9 marks)

c) State four factors to be considered when selecting roof covering materials. (4 marks)

3 a) i) List three types of bonding (3 marks)

ii) Sketch and label the plan of 1½ brick squint angle wall shown in figure 1 below



(8 marks)

FIGURE 1

b) State four functional requirements of formwork (4 marks)

c) State five precautions to be observed before any underpinning operation is commenced

(5 marks)

4 a) Define the following terms

i. Stress
ii. Strain
iii. Yield point
iv. Young's modulus (8 marks)

b) Briefly explain a curtain wall and state two advantages of curtain wall construction (8 marks)

c) State four factors to be considered when connecting house drains to public sewer (4 marks)

5 a) Figure 2 below shows a simply supported beam loaded as shown. Determine the reactions A and B.

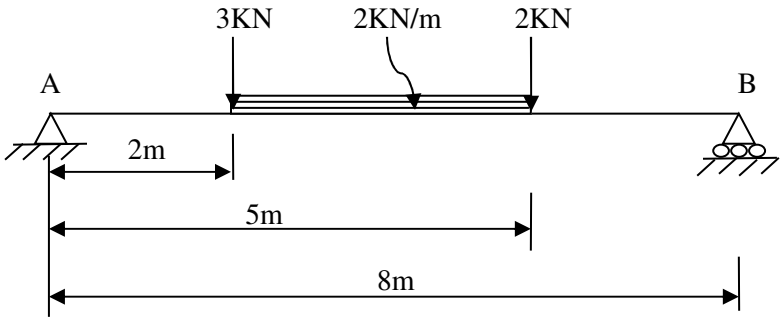


FIGURE 2

(5 marks)

b) i) State two remedies that may be taken to reduce the possibilities of overloading strip foundation causing settlement on the soil below. (2 marks)

ii) State three functional requirements of a floor (3 marks)

c) State five desirable features in the design and construction of a household septic tank

(5 marks)

d) List five effects of dampness in a building (5 marks)

6 a) i) State three reasons for shoring (3 marks)

ii) Using labeled sketches describe a putlog scaffold (14 marks)

b) List three purposes of cavity wall (3 marks)

7 a) Outline three factors which determine the method of demolition to be used (3 marks)

b) Using sketches outline the procedure of fixing ceramic tiles on masonry walls (8 marks)

c) State seven factors that will influence the selection of precast concrete floor (7 marks)

d) State two objectives of plastering (2 marks)

8 a) Explain the construction of granolithic flooring (5 marks)

b) i) State six characteristics of an ideal paint (6 marks)

ii) Outline the process of painting new plastered wall surfaces (4 marks)

c) State five requirements of a good stair (5 marks)