



Machakos University College

(A Constituent College of Kenyatta University)

University Examinations 2013/2014

SCHOOL OF ENGINEERING

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

GBC II & DRAWING I

Date: 21/3/2014

Time: 2:00 pm – 5:00 pm

Instructions

1. This paper consists of Eight Questions in two sections A and B
2. Answer Five Questions taking three questions from section A and Two Questions from Section B.
3. All questions carry equal marks
4. You require the following for this examination
 - (i) Drawing instruments
 - (ii) Answer booklet
 - (iii) Drawing paper (size A3)

SECTION A: GENERAL BUILDING CONSTRUCTION II

Answer at least two Questions from this section

1. (a) State six advantages of hollow pot upper floor construction (6 marks)
(b) Sketch and label THREE types of single roof construction. (14 marks)
2. (a) Highlight Five factors which influence the choice of upper floor precast concrete Units (10 marks)
3. (b) Explain five functional requirements of roof construction. (10 marks)
(a) Sketch and label a typical timber pitched roof truss. (8 marks)

- (b) Make a neat sectional sketch of a suspended timber ground floor. (12 marks)
4. (a) Sketch and label a vertical section through a concrete flat roof showing the method of waterproofing. (8 marks)
- (b) Describe THREE types of roof covering materials. (9 marks)
- (c) Explain the term hone-comb sleeper wall as used in suspended timber ground flows. (3 marks)
5. (a) Sketch and label to show the following in roof construction
- (i) Span
 - (ii) Rise
 - (iii) Pitch
 - (iv) Gauge
 - (v) Birds Mouth Joint
 - (vi) Wall plate
 - (vii) Collar
 - (viii) Ridge Piece
- (8 marks)
- (b) With aid of a neat sketch, briefly explain the construction of a hollow pot reinforced concrete flow. (12 marks)

SECTION B: BUILDING DRAWING- (40 MARKS)

Answer Question SIX and any other One question from this Section

6. (a) Drawing no. 01 show a floor plan of a single bedroom unit. Prepare a detailed working drawing for section Y-Y up to and including the d.p.c given the following information
- Load bearing walls = 200mm
 - Non load bearing walls = 150mm
 - Foundation strip depth = 300mm
 - Floor finishes;
 - (i) Room A – PVC tiles
 - (ii) Room B – Terrazzo
 - (iii) Room C & D – cement sand screed
 - Scale 1:50
 - All dimensions in mm
 - Assume any relevant data not given. (20 marks)

7. (a) State Two roles of each of the following persons in architectural practice.
- (i) Architect
 - (ii) Physical planner
 - (iii) Engineer
 - (iv) Surveyor
 - (v) Contractor
 - (vi) Lawyer
- (6 marks)
- (b) Describe in detail the stages involved in the design process of any building project. 10 marks)
- (c) Represent the process described above in a flow chart. (4 marks)
8. (a) Giving two examples in each case, state four categories of building. (4 marks)
- (b) Explain the importance of the following documents to a project developer.
- (i) Title deed
 - (ii) Certificate of land transfer
 - (iii) Survey plan
 - (iv) Rates payment note
- (4 marks)
- (c) Explain six aspects of designing that an architect/Draughtsman must consider before commencing plan preparation in office practice. (12 marks)