MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)
University Examinations for 2015/2016

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

Second Semester Examination for:
2705/303:   **Diploma in Building Technology**

BUILDING TECHNOLOGY

Date: --/7/2016   **Time: 8:30 -10:30 am**

Instructions:

*This paper consists of **Eight** questions*
*Answer any **Two** questions from section A, **Two** questions from section B and **One** question from section C*

SECTION A : BUILDING TECHNOLOGY

Answer any two questions from this section

1.
   a) State any functions of cladding on high rise buildings.   (6 marks)
   b) Sketch a section showing all the details of a storey height precast concrete cladding. (6 marks)
   c) State four requirements of cladding joints.   (4 marks)
   d) Explain the term "fir load"   (4 marks)
   e) State five reasons for using suspended ceilings as a building finish. (5 marks)

2.
   a) Briefly describe the surface preparation of a concrete structure to receive a plaster finish. (4 marks)
   b) With aid of a diagram explain the construction of the following:
      (i) Timber Skirting
      (ii) Terrazzo Skirting
      (iii)Tile Skirting   (9 marks)
   c) List any four functions of internal plaster.   (2 marks)
   d) Briefly explain how plastering is applied on wall surfaces.   (5 marks)
   e) List five functions required for timber doors.   (5 marks)

3.

a) Differentiate between pointing and jointing in brickwork.   (4 marks)
b) State six factors to be considered when selecting floor finishes.   (6 marks)
c) Sketch a section through a suspended ceiling along a perimeter wall showing the details at the support.   (5 marks)
d) Outline the terrazzo laying procedure.   (10 marks)

SECTION B : BUILDING DRAWING
*Answer any **two** questions from this section*

4. Figure 1 shows the elevation of a pitched roof covered with clay tiles to a scale of 1:10 draw and label the details at:
   a) joint marked A   (8 marks)
   b) joint marked B   (7 marks)

5. sketch a vertical section and elevation to show a block wall finished with vertical timber cladding (feather edge boards)   (15 marks)

6. sketch and label a section through a suspended timber ground floor   (15 marks)

SECTION C : SERVICES
Answer ONE question from this section

7.
   a) Define the following terms used in storm water drainage:-
      (i) Rainfall Intensity in mm/hr.
      (ii) Surface Run-off in $l/s/m^2$
      (iii)Hydraulic mean depth in mm.
                (6 marks)
   b) To a suitable scale, draw a fully labeled and dimensioned section through an estate road showing a suitable method of surface water disposals
                (10 marks)
   c) Using a rainfall intensity of 75mm/hr. and assuming 0% permeability calculate:-
      (i) Volume run-off on $1 \ m^2_{/hr}$ in m^3
      (ii) Volume run-off on $1 \ m^2$ in l/s
                (4 marks)

8.
   a) Define the following terms:-
      (i) Flamable
      (ii) Inflamable
      (iii)Non –flamablle
      (iv)Incombustible

                                                                        (4 marks)
   b) With aid of sketches explain the combustion triangle

                                                                        (6 marks)
   c) Define the following terms used in relation to fire resistance:-
      (i) Integrity
      (ii) Stability
      (iii)Insulation

                                                                        (3 marks)
   d) With aid of sketches explain the sprinkler installation system:-   (7 marks)