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

FIRST SEMESTER EXAMINATION FOR DIPLOMA IN CIVIL ENGINEERING

GENERAL BUILDING CONSTRUCTION III

Date: **Time:**

INSTRUCTIONS:

- **Answer all the Questions**

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)
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)
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) Outline the terrazzo laying procedure. (10 marks)

4. a) State any six reasons for using suspended ceilings as a building finish. (6 marks)

b) Sketch a section through a suspended ceiling along a perimeter wall showing the details at the support. (4 marks)

c) Briefly describe the functional requirements of a window. (3 marks)

d) With aid of a sketch, describe a paneled door. (3 marks)

e) List any four functions required for timber doors. (4 marks)

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SECOND SEMESTER EXAMINATION FOR CERTIFICATE IN BUILDING ENGINEERING

BCE BT 214: ENGINEERING DRAWING IV

Date: **Time:**

INSTRUCTIONS:

- **This paper consists of Five questions**
- **Answer question one and any other two questions in this paper.**

QUESTION ONE

a) Make neat diagrammatic sketches to show the sign convention symbols for the following building materials.

i. Natural stone

ii. Wrot timber

iii. Unwrot timber

iv. Concrete

v. Brick (10 marks)

b) Fig. 1 shows a block in first angle orthographic projection. Draw the block in one point perspective drawing. (10 marks)

QUESTION TWO

Fig 2 shows a block in first angle orthographic projection. Draw the block in two-point perspective drawing. (20 marks)

QUESTION THREE

Fig 3 shows two views of a wooden block and its perspective layout. Copy the layout and draw the block two-point perspective drawing. (20 marks)

QUESTION FOUR

Make a neat sketches to show the following types of foundations.

i) Traditional strip foundation

ii) Raft foundation (20 marks)

QUESTION FIVE

Make a neat sketches to show the following types of single roofs showing their maximum spans.

i) Couple roof

ii) Closed couple roof

iii) Collar tie roof

iv) King post roof (20 marks)

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SECOND SEMESTER EXAMINATION FOR

DIPLOMA IN BUILDING CONSTRUCTION ENGINEERING

DIPLOMA IN CIVIL ENGINEERING

BCE CD 115: SURVEYING I

Date: **Time:**

INSTRUCTIONS:

- **This paper consists of Five questions**
- **Answer question one and any other two questions in this paper.**

QUESTION ONE

a) Define the term surveying. (2 marks)

b) State four purposes of surveying. (8 marks)

c) Outline two branches of surveying. (4 marks)

d) Explain the three main obstacles in chain surveying. (6 marks)

e) Define the term leveling (2 marks)

f) State and briefly describe types of levels. (8 marks)

QUESTION TWO

a) Name five types of surveyor outlining their duties. (10 marks)

b) Show a method of measuring a line over a small hill. (10 marks)

QUESTION THREE

a) Briefly explain a procedure of measuring a line across a tall building without setting out right angles. (10 marks)

b) Make a neat diagrammatic sketch to show the basic optical principle of a telescope. (10 marks)

QUESTION FOUR

Briefly explain the following terms as applied in leveling.

i. Level line
ii. Reference plane
iii. Reduced level
iv. Bench mark
v. Temporary benchmark
vi. Line of collimation
vii. Spot height
viii. Back sight
ix. Fore sight
x. Intermediate sight (20 marks)

QUESTION FIVE

a) State five types of errors which may be encountered in ordinary leveling. (10 marks)

b) Briefly outline a suitable method of measuring a line across a wide river without setting out right angles. (10 marks)

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SECOND SEMESTER EXAMINATION FOR

DIPLOMA IN BUILDING CONSTRUCTION ENGINEERING

DIPLOMA IN CIVIL ENGINEERING

BCE CD 314 CONSTRUCTION MANAGEMENT I

Date: **Time:**

INSTRUCTIONS:

- **This paper consists of Five questions**
- **Answer question one and any other two questions in this paper.**

QUESTION ONE

a) Name two types of constructors outlining their terms. (4 marks)

b) Explain the meaning of management principles. (4 marks)

c) Outline any four functions of management principles. (8 marks)

d) Outline any five qualities of a good leader. (5 marks)

e) Define the term "discipline". (2 marks)

f) Differentiate between hoarding and fencing. (4 marks)

g) State three factors to consider when positioning plant on a given site. (3 marks)

QUESTION TWO

a) Outline two duties of each of the following members in the building team.

i) Client

ii) Quantity surveyor

iii) Architect

iv) Draughtsman

v) Contractor (10 marks)

b) Briefly explain how the following materials can be stored in a site.

i) Timber

ii) Cement (10 marks)

QUESTION THREE

Make a neat sketch to show a site layout plan of a masonry workshop. (20 marks)

QUESTION FOUR

a) Explain the importance of signboards in a site. (5 marks)

b) Outline two types of tendering. (10 marks)

c) Briefly explain the term "Span of Control" (5 marks)

QUESTION FIVE

a) Outline any two methods of programming contracts. (10 marks)

b) Make a neat sketch of a good organization structure of the building team. (10 marks)

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SECOND SEMESTER EXAMINATION FOR DIPLOMA IN CIVIL ENGINEERING

BCE CD 309: CIVIL ENGINEERING CONSTRUCTION

Date: **Time:**

INSTRUCTIONS:

- **This paper consists of Five questions**
- **Answer question one and any other two questions in this paper.**

1. a) Describe five factors that determine the choice of a type of dredging equipment. (10 marks)

   b) State two functional requirements of an ideal material for sleepers. (4 marks)

   c) State two problems observed during tunnel construction. (4 marks)

   d) Explain two methods used in maintenance of dams. (8 marks)

   e) Explain the meaning of water front structures. (4 marks)

2. a) With aid of sketches describe the following water front structures. (12 marks)

      i) Sea wall

      ii) Break waters

      iii) Jetty

   b) Outline four reason for a dredging process. (8 marks)

3. a) Outline five functional requirements of an ideal fish plate. (10 marks)

   b) With aid of a sketch, describe the cast iron, iron pot type of chairs. (4 marks)

   c) With aid of a sketch describe the moles water front structure. (6 marks)

4 a) With aid of a sketch, explain any joint involved in a rigid pavement construction during road construction. (4 marks)

b) Outline four objectives of soil stabilization during road construction. (4 marks)

c) With aid of a sketch explain the heading and benching methods of tunnels constructions. (6 marks)

d) Explain the following in railways

i) Turn out

ii) Cross – over

iii) Diamond crossing (6 marks)

5 a) With aid of a sketch, describe a fish plate fastening. (6 marks)

b) With aid of sketches differentiate between bull leaded rails from double leaded rails. (6 marks)

c) Explain briefly the procedure involved during reclamation process. (6 marks)

d) Explain what is meant by super elevation in rails. (2 marks)

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FIRST SEMESTER EXAMINATION FOR DIPLOMA IN BUILDING CONSTRUCTION ENGINEERING

BCE CD 309: BUILDING TECHNOLOGY IV

Date: **Time:**

INSTRUCTIONS:

- **This paper consists of Five questions**
- **Answer question one and any other two questions in this paper.**

1. a) Outline five functions of roofs . (5 marks)
   b) Briefly explain two methods of determining the slope of a roof. (4 marks)
   c) Differentiate between clear and effective spans. (4 marks)
   d) With aid of a neat sketch differentiate between a door frame and a door lining (6 marks)
   e) Make a neat front elevation of a four panelled gunstock door. (6 marks)
   f) Outline five reasons as to why dewatering is necessary.
2. a) Make a neat sketch of a framed ledged braced and battened door. (10 marks)
   b) Make a neat sketch of a queen post truss. (10 marks)
3. a) Make a front elevation of a casement window and name all the parts. (10 marks)
   b) Briefly explain the electro-osmosis technique of dewatering.
4. Make neat sketches of four types of retaining walls. (20 marks)
5. Make neat sketches of the following types of single roofs.
   a) Lean – to roof

b) Couple roof

c) Closed couple roof

d) Collar tie roof (20 marks)