



MACHAKOS UNIVERSITY

University Examinations for 2020/2021

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

FIRST YEAR SECOND TERM EXAMINATION FOR

CERTIFICATE IN BUILDING CONSTRUCTION TECHNOLOGY

IN BUILDING TECHNOLOGY

1705/ CARPENTRY WORKS

DATE: 6/9/2021

TIME: 8:30 – 11:30 AM

INSTRUCTIONS:

ANSWER ALL THE FIVE QUESTIONS

1. (a) Define the following personalities: (4 marks)
 - Joiner
 - Carpenter
- (b) State the three classes of safety (6 marks)
- (c) Make neat sketches of the following tools:
 - Mortise gauge (5 marks)
 - Wooden mallet (5 marks)
2. (a) briefly explain what can be done to save an individual electrically electrocuted (10 marks)
- (b) Make a neat sketch of a bench with all the attachments
3. Outline the steps to undertake when truing up stock (20 marks)
4. (a) Define the term door (2 marks)
- (b) Briefly explain the following terms
 - Seasoning (5 marks)
 - Conversion (5 marks)
- (c) Make a neat sketch of a G-cramp and name all the parts (8 marks)
5. (a) Make a neat sketch through a section of a tree trunk and name all the parts (10 marks)
- (b) Make neat sketches of the following types of doors
 - Battened and leged door
 - Battened ledged and braced door (10 marks)



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SECOND YEAR SECOND TERM EXAMINATION FOR

CERTIFICATE IN BUILDING CONSTRUCTION TECHNOLOGY

IN BUILDING TECHNOLOGY

1705/1707/105D CONSTRUCTION MATERIALS 2

DATE:1/9/2021

TIME: 8:30 – 11:30 AM

INSTRUCTIONS:

ANSWER ALL THE FIVE QUESTIONS

1. (a) Define the following terms
-Concrete
- Cement
-Aggregate (9 marks)
- (b) Make a neat sketch of a cross section of a tree trunk. Name all the parts and their functions (11 marks)
2. (a) Briefly explain the following terms
Timber seasoning
Timber conversion (10 marks)
- (b) Outline five reasons for seasoning timber
3. (a) Make a neat stack for seasoning timber using the natural method (15 marks)
- (b) State any five types of timber defects (5 marks)
4. (a) Make neat sketches of any two types of knots (8 marks)
- (b) Give the mixes for the following types of concrete
Mass concrete (4 marks)
Reinforced concrete (4 marks)
- (c) Make a neat suitable formwork for a rectangular concrete column (8 marks)
5. (a) Differentiate between paint and painting (4 marks)
- (b) State the three reasons for painting (6 marks)
- (c) State any five characteristics of a good paint (10 marks)



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DIPLOMA IN BUILDING CONSTRUCTION TECHNOLOGY

2705/2707/105D: TECHNICAL DRAWING

DATE: 9/9/2021

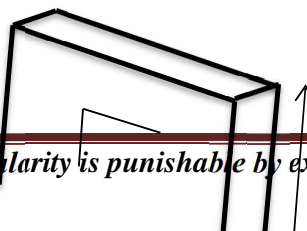
TIME: 11:30 – 2:30 PM

INSTRUCTIONS:

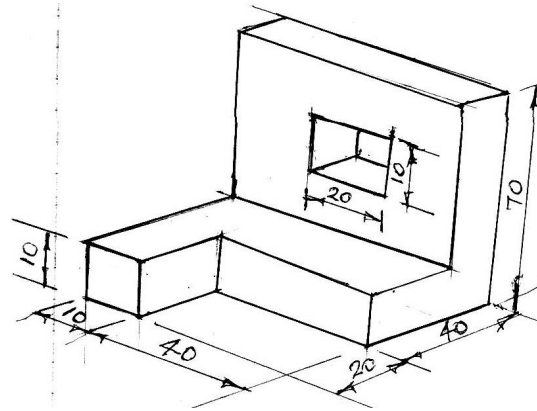
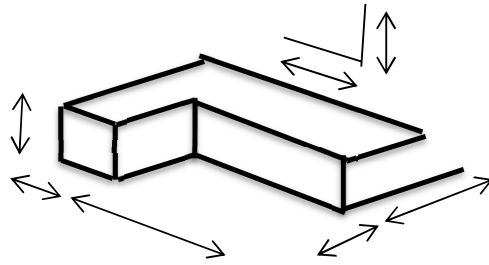
ANSWER ALL THE FIVE QUESTIONS

1. (a) Construct a rectangle given the diagonal and the short side. Let the diagonal be 80mm and the short side 30mm. (10 marks)
(b) Construct a parallelogram given the sides as 40mm and 80mm and one of the interior angles as 60 (10 marks)
2. (a) Construct an octagon within a square of 65mm sides (10 marks)
(b) Construct a regular hexagon using a 30/60 given one side as 35mm (10 marks)
3. (a) Construct a regular heptagon given one side as 35mm (10 marks)
(b) Construct a regular hexagon within a circle of radius 25mm (10 marks)
4. (a) Construct an ellipse using two concentric circles of radii 15mm and 25mm respectively (10 marks)
(b) Construct an ellipse within a rectangle of 70mm and 30mm respectively (10 marks)
5. The pictorial drawing below indicates a shape of a component, using first angle first a projection:
Draw:
(a) Front elevation (5 marks)
(b) Plan (5 marks)
(c) Left end elevation (5 marks)

(d) Right end elevation (5 marks)



All measurements are
in millimetres





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DIPLOMA IN BUILDING CONSTRUCTION TECHNOLOGY

2705/2707: GENERAL BUILDING CONSTRUCTION

DATE: 6/9/2021

TIME: 2:30 – 5:30 PM

INSTRUCTIONS:

ANSWER ALL THE FIVE QUESTIONS

1. Make neat sketches of the following types of foundations
 - (a) Raft foundation
 - (b) Traditional strip foundation
 - (c) Wide strip foundation
 - (d) Deep strip foundation
 - (e) Stepped foundation(20 marks)
2.
 - (a) With aid of neat sketches differentiate between a door frame and a door lining (10 marks)
 - (b) make a neat sketch to show a tongue and groove joint (5 marks)
 - (c) Differentiate between bearing capacity and bearing pressure as applied in foundations (5 marks)
3.
 - (a) illustrate the following types of flush doors
 - (i) Skeleton core flush door
 - (ii) Solid core flush door(10 marks)
 - (b) Make a front elevation of a four paneled door and name all the parts (10 marks)
4.
 - (a) Make a neat sketch of a corner profile board and name all the parts (10 marks)
 - (b) Outline any five duties of a general foreman in a construction site (10 marks)
5.
 - (a) Briefly explain the following initials and state where they are applied
 - DPC
 - DPM(8 marks)
 - (b) Make a neat sketch of a solid ground floor showing all the components from the ground and their minimum thicknesses (10 marks)
 - (c) List TWO suitable materials for a DPM (2 marks)

Examination Irregularity is punishable by expulsion