

**Candidate's Examination Number.....**

**SMZ**

**ZANZIBAR EXAMINATIONS COUNCIL**

**FORM THREE ENTRANCE EXAMINATION**

**058**

**MECHANICAL DRAUGHTING**

**TIME: 2:30 HOURS**

**FRIDAY 05<sup>TH</sup> NOVEMBER 2020 1 P.M**

**INSTRUCTIONS TO CANDIDATES**

1. This paper consists of THREE (3) sections A, B and C.
2. Answer ALL questions in this paper.
3. All dimensions are in millimeters (mm).
4. Write your examination number on every page of this booklet.
5. Calculators, Cellular phones and unauthorized materials are not allowed in the examination room.

<b>FOR EXAMINER'S USE ONLY</b>		
<b>Question number</b>	<b>Marks</b>	<b>Signature</b>
<b>1</b>		
<b>2</b>		
<b>3</b>		
<b>4</b>		
<b>5</b>		
<b>6</b>		
<b>7</b>		
<b>8</b>		
<b>9</b>		
<b>10</b>		
<b>TOTAL</b>		

**This paper consists of 8 printed pages**

1. Choose the correct answer and write its letter below the item number in the given table.

- i) The name given to the instrument used for drawing purpose is
- |               |                  |
|---------------|------------------|
| A. Compass    | B. Drawing board |
| C. Protractor | D. Rule          |
- ii) Which of the following is a type of triangle with all unequal sides and angles?
- |                          |                      |
|--------------------------|----------------------|
| A. Equilateral triangle  | B. Isoscles triangle |
| C. Right angled triangle | D. Scalene triangle  |
- iii) The unit of dimension used to describe linear measurement in drawing is
- |           |                |
|-----------|----------------|
| A. inches | B. kilometers  |
| C. metre  | D. millimeters |
- iv) A straight line touching a circle at right angle to a radius of a circle called
- |                  |                |
|------------------|----------------|
| A. Centre line   | B. Hidden line |
| C. Parallel line | C. Tangent     |
- v) What are the two methods of representing orthographic views?
- |  |  |
|--|--|
| A. First angle projection and third angle projection |  |
| B. First angle projection and isometric              |  |
| C. Pictorial and oblique                             |  |
| D. Pictorial and isometric                           |  |
- vi) A circumscribed circle is the one which is drawn
- |                    |                    |
|--------------------|--------------------|
| A. Crossing figure | B. Inside figure.  |
| C. Outside figure  | D. Touching figure |
- vii) T- square is used to draw
- |                       |                       |
|-----------------------|-----------------------|
| A. All vertical lines | B. All inclined lines |
| C. Centre lines       | D. Horizontal lines   |

viii) The dimension of paper size A3 is

- A. 540mm by 200mm      B. 594mm by 841mm  
C. 297mm by 420mm      D. 218mm by 110mm

ix) What is the name of a polygon with 8 sides?

- A. Nonagon      B. Octagon  
C. Pentagon      D. Square

x) This is a name of the instrument used for setting off distance

- A. Both A and C      B. Pair of divider  
C. Pair of compasses      D. Rule

**Answers**

i	ii	iii	iv	v	vi	vii	viii	ix	x

2. Match the item in **Column A** with response in **Column B** by writing the letter of the correct response below the item number in the given table.

<b>LIST A</b>	<b>LIST B</b>
i. Short dashed lines	A. A line that passes through a centre of a circle
ii. Orthographic	B. An angle which is less than 90°
iii. Acute angle	C. Scale
iv. The rule used to decrease or increase the size of an object	D. 3 equal sides
v. Equilateral triangle	E. First angle and third angle projection
	F. First angle and isometric
	G. A line used to show hidden details

**Answers**

i	ii	iii	iv	v

**SECTION B: (70 Marks)**

**Answer ALL questions from this section.**

3. a) In relation to Mechanical Draughting, briefly explain the meaning of the term "Tangent".

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- b) Draw a common interior tangent to two unequal circles of diameter 50mm and 40mm and their centre are 75mm apart.

4. a) The title block makes a drawing appear official and important, use your knowledge of mechanical draughting to give the meaning of the term **title block**.

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- b) Identify any six (6) features existing in a title block.

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- c) Give three (3) examples of paper size used in mechanical draughting.

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5. a) Bisect the line AB =65mm  
b) i) Construct an angle  $60^{\circ}$   
ii) Construct an angle  $30^{\circ}$

6. Define the following terms.

- |             |                   |                        |
|-------------|-------------------|------------------------|
| i) Ratio    | ii) Draughting    |                        |
| iii) Angle: | iv) Quadrilateral | v) Perpendicular lines |

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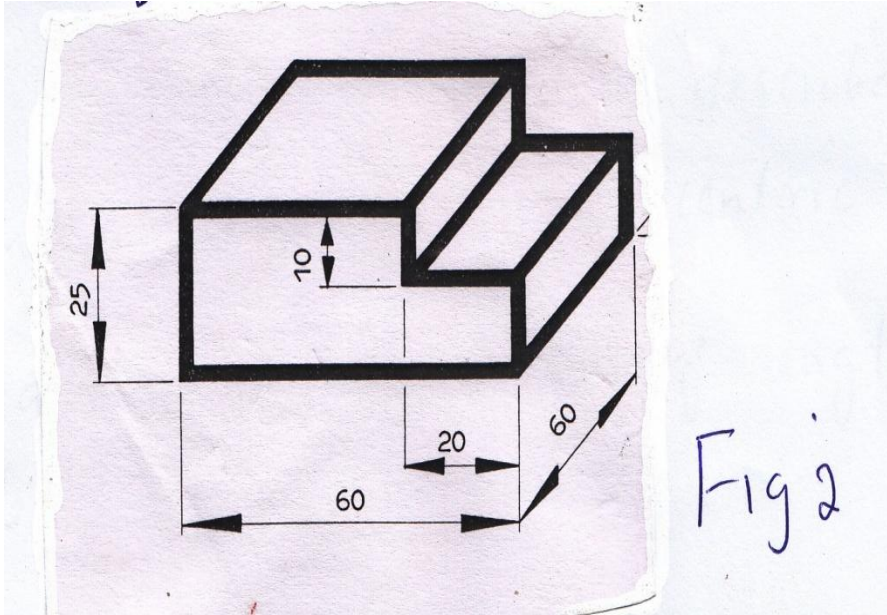
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7. a) Draw a parallel line AB and CD which is equidistance 3.0 cm apart.  
b) Draw line MN =65mm and divide it into equal parts.
8. Draw the figure 2 below in

a) Isometric projection

b) Oblique projection



9. a) With examples distinguish between visible lines and hidden lines as used in technical draughting.

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- b) Briefly explain the procedure to be followed if you want to bisect a line.

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**SECTION C: (15 Marks)**

**Answer only ONE (1) question from this section.**

10. From the figure below, draw the front end and plan in first angle projection in the direction of arrow **F**

