

PRIME MINISTER'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT
BUSEGA DISTRICT COUNCIL
FORM THREE TERMINAL EXAMINATION

041

BASIC MATHEMATICS

TIME:3HOURS

MAY,2026

INSTRUCTIONS

MsomiBora.com

1. This paper consists of two sections A and B
2. Attempt all questions
3. Write your examination number on every page
4. All writing should be in blue or black ink, except drawings which must be done in pencil

SECTION A (60 marks)

1. (a) Three buses BATCO, GILA and NGALABUSHI complete their journey from GININIGA to NYASHIMO at different time, if BATCO complete after 90minutes, GILA after 120minutes and NGALABUSHI after 110minutes. If they started together on Tuesday 07:00am. When will they start together again?

(b) If $x = 0.2$, $y = 0.3$ and $z = 0.9$ $x = 0.2$, $y = 0.3$ and $z = 0.9$. Find

xz / y xz / y

2. a). Without using mathematical table simplify $\frac{9\sqrt{3} - \sqrt{2}}{9\sqrt{3} - \sqrt{2}} \frac{9\sqrt{3} - \sqrt{2}}{9\sqrt{3} - \sqrt{2}}$

b) by substitution $t = 3^x$ solve the equation $3^{2(1+x)} - 3^x = 3^{(x+3)} - 3$

3. In a class of 45 pupils, 25 takes history, 27 takes Commerce. If the total number of those who takes History and Commerce is 37, Find:

- (a) The number of pupils who takes both History and Commerce.
- (b) The number of pupils who takes History only.
- (c) The number of pupils who takes neither History nor commerce.

4. a). The line joining (2,-3) and (x, 5) has gradient -2, find x

b). Express “y” in term of x; $3x+2y=6$ and state the gradient, the y- intercept x-intercept in the equation

5. (a) If in a regular polygon the ratio of the degree measure of the exterior to the interior angles 1:5, Find the number of sides of the polygon

(b) . How many grams are there in 0.0915 tones?

6. (a). If X varies directly as Y and inversely as Z and $X=8$, $Y=12$ and $Z=6$

- i. Express X in term of Y and z
- ii. If $Y=16$ and $Z=4$. Find the value of X

(b). Water from a tap gets into a tank at a rate of 20 liters per minutes. How long will it take to fill a tank that is 10,000 liters? Give your answer in hours and minutes

7(a) .If $a: b = 2:5$ and $b:c = 2:3$, find $a:b:c$

(b)The profit on an item costing Tsh. 8000 is decreased by Tsh. 480 When its sells price is reduced by 5%. Find: (i) The sells price (ii) percentage profit before reduction

8. (a). Find the product of the first 100terms of GP. If G_1 , G_2 and G_3 are 2, 4 and 8 respectively

(b). A business person deposited 800, 000Tanzanian shillings in a bank account paying 6% interest compounded semi- annually. What will be the total amount after 5years?

9. (a). From a top of a tower, the angle of depression of a point on the ground 20m away from the base of the tower is 60° . How high is the tower?

(b). (a) A man who is 3m tall, stand on a horizontal surface 10m from the church tower and found that, the angle elevated from the eyes of man is 60° . Find the height of the church tower

10. (a). Solve for x if $5-2x \geq 7x-4$

(b). Find two consecutives even numbers whose product is 80.

SECTION B (40 MARKS)

11. The final scores in a History examination was recorded as shown in the following table.

class mark	67	72	77	82	87	92	97
frequency	10	12	21	6	9	4	4

(i). construct the cumulative frequency table to show the class interval

(ii) calculate mean by assumed mean

12. (a). Given that $R=\{(x, y); y= x^2+1 \text{ and } y<5\}$

- i. Draw the graph of R

ii. State domain and range

13. (a) Find the image of A (1,2) after reflection under the line $y=3$

(b). A translation takes from the origin to (2,1). Find where it takes

(i.) (4,3)

(ii).(-3,-7)

14. The function is defined by

$$F(x) = \begin{cases} x + 3 & \text{if } x < -1 \\ 2 & \text{if } -1 \leq x \leq 1 \\ x & \text{if } x > 1 \end{cases}$$

(a) Sketch the graph of $F(x)$

(b) Determine the domain and range of $F(x)$

(c) Find the value of $F(-4)$, $F(0)$ and $F(2)$

(d) For what value of x , $F(x) = -5$?