

**THE UNITED REPUBLIC OF TANZANIA  
NATIONAL EXAMINATIONS COUNCIL  
FORM TWO SECONDARY EDUCATION EXAMINATION**

0041

BASIC MATHEMATICS

Time: 2:30 Hours

Tuesday, 17<sup>th</sup> November 2015 a.m.

**Instructions**

1. This paper consists of sections A and B.
2. Answer **all** questions showing clearly all the working and answers in the space provided.
3. **All** writing must be in blue or black ink **except** drawings which must be in pencil.
4. Mathematical tables, geometrical instruments and graph papers may be used where necessary.
5. **All** communication devices and calculators are **not** allowed in the examination room.
6. Write your **examination number** at the top right corner of every page.

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QUESTION NUMBER	SCORE	EXAMINERS' INITIALS	QUESTION NUMBER	SCORE	EXAMINERS' INITIALS
1			14		
2			15		
3			16		
4			17		
5			18		
6			19		
7			20		
8			21		
9			22		
10			23		
11			24		
12			25		
13					
<b>TOTAL</b>					

**SECTION A (60 MARKS)**

Answer all questions in this section

1. Calculate the value of  $x + y + 2z - 12$ , when  $x = 5$ ,  $y = 8$  and  $z = 9$ .

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2. The number of students who sat for the Primary School Leaving Examination (PSLE) in 2013 was \$44,918. Express this number in standard notation.

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3. If A and B are complementary angles such that angle  $A$  is  $18^\circ$  less than angle  $B$ , determine the angles.

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4. Find the value of  $x$  in the equation  $\frac{6}{x+1} = 12$ .

5. Simplify the expression  $9(a - 3b) + 5(4b + a) - b$ .

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6. When 6 is subtracted from a certain number, the result is greater than 29. Write down an inequality that represents the possible values of this number.

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7. Without using mathematical tables, evaluate:  $\frac{(0.136)^2 - (0.148)^2}{0.136 - 0.148}$ .

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8. The length of one side of a square is  $(3x + 4)$  cm. If the side lengths of this square are doubled, find the equation for the perimeter after changing the length of the square.

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9. Find the value  $\frac{a}{b}$ , given that  $3^a \times 5^b = 675$ .

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10. The football ground at Merita secondary school is  $12\frac{1}{2}$  times as long as the length of the basketball ground. If the football ground is 100 meters long, find the length of the basketball ground.

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11. Represent the solution set of the inequality  $3x + 4 \geq 25$  on a number line.

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12. In a certain animal farm 10% of the animals are horses,  $\frac{1}{4}$  are goats, 0.15 are sheep and  $\frac{1}{2}$  are cattle. Arrange these numbers in ascending order.

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13. Write 750 grams as a fraction of 5 kilograms.

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14. If John is  $x$  years old and Mary is 3 years older than John, write down an equation for the sum of their ages

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15. Determine the value of  $x$  that satisfies the equation  $\frac{x-y^2}{x+2} = 7$  given that  $y = 2$ .

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16. Write  $4 \log 2 - \frac{1}{2} \log 64$  as a single logarithmic expression.

17. Find the product of the G.C.F and L.C.M of 4, 8 and 12.

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18. If the straight line  $AB$  that is passing through the points  $A(2, 6)$  and  $B(t, 3)$  has gradient  $-1$ , find the value of  $t$ .

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19. If a triangle has two equal sides of length  $x$  cm each and the third side measures 6 cm more than the length of these congruent sides, write down an equation that represents the perimeter of this triangle.

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20. Kapona bought a computer for 250,000/= and sold it after one years at a loss of 5 percent. Calculate the amount of the loss.

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**SECTION B (40 Marks)**

Answer **all** questions in this section

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21. The area of a rectangular room is  $1125 \text{ cm}^2$  . If its length is five times its width, find its perimeter.

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22. Evaluate  $\frac{1.34 \times 5.804}{\sqrt{0.4391}}$  using logarithmic tables.

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23. A ladder 15m long leans against a vertical wall such that the top of the ladder makes an angle of 63 degrees with the vertical wall. Find the height of the wall.

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24. In a class of 50 students, 16 like watching television, 41 like reading story books and 7 do not like neither watching television nor reading story books. Find the number of students who like both watching television and reading story books using the formula.

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25. In the figure below  $\overline{EF} = \overline{FG}$  and  $\overline{EH} = \overline{HG}$ . Show that triangles  $EFH$  and  $GFH$  are similar.

