

GATITU SECONDARY SCHOOL, P.O. BOX 327 – 01030, GATUNDU.
FORM 3 MATHEMATICS END OF TERM 1 EXAMINATION. 2015

1. Without using tables or calculator, evaluate

$$\sqrt[3]{\frac{0.064 \times 125}{343}}$$

(3mks)

2. Solve the following equation $2 \times 3^x = 162$

(3mks)

3. Simplify $(\frac{6}{7})^2 \times (\frac{7}{6})^{-2}$

(3mks)

4. Use mathematical tables to evaluate

(4mks

$$\underline{94.7 \times 16.45}$$

$$12.5 \times 8.93$$

5. A line L_1 passes through point $(1, 2)$ and has a gradient of 5. Another line L_2 is perpendicular to L_1 and meets it at a point where $X = 4$. Find the equation of L_2 in the form $y = mx + c$ (4mks

6. Find the values of X which satisfy $5^{2x} - 6 \times 5^x + 5 = 0$

(4mks

7. The length of a room is 4 metres longer than its width. Find the length of the room if its area is 32m^2 . (4mks)

8. Simplify the expression $\frac{3a^2 + 4ab + b^2}{4a^2 + 3ab - b^2}$ (4mks)

9. Karani bought 4 pencils and 6 biros for sh 66 and Jane bought 2 pencils and 5 biros for sh 51.
a) Find the price of each item. (4mks)

b) Esther spent sh. 228 to buy the same type of pencils and biros. If the number of biros she bought were 4 – more than the number of pencils. Find the number of pencils she bought. (3mks)

10. Mary has 21 coins whose total value is sh 72. There are twice as many five shillings coins as there are ten shillings coins. The rest are one shillings coin. Find the number of ten shillings coins that Mary has. (4mks)

11. A car travelled a distance of 40km at an average speed of 30km/h. and then a further distance of 30km. If the average speed for the whole journey was 40km/h, what was the average speed for the last 30 km. (4mks)

12. Express $0.\overline{351}$ as a fraction.

(3mks)

13. A bus sets off northwards at 69km/h. Half an hour later a car sets off at 80km/h in the same direction. How far will both vehicles have travelled when the car overtakes the bus? (3mks)

14. Using a ruler and compasses only, construct a quadrilateral ABCD with $BA = 3\text{cm}$, $AB = 4\text{cm}$, $BC = 7\text{cm}$, $CD = 6\text{cm}$ and angle $BAD = 135^\circ$. (4mks)

b) Measure length BD and AC.

(2mks)

15. Find the median of the following numbers.
-8, 0, 0, 4, 1, -2, 4, 6, 2, 10

(2mks)

16. Solve the following quadratic equations

(3mks)

i) $X^2 - 8X + 15 = 0$

ii) $25 - 7x^2 = 18x$

(4mks)

iii) $2x^2 + 7x - 9 = 0$

(3mks)

17. A group of young men decided to raise sh. 480,000 to start a business. Before the actual payment was made, four of the members pulled out and each of the remaining had to pay an additional sh. 20,000. Determine the original number of members. (10mks)

18. Using a range of $-4 \leq x \leq 4$, draw a graph of $y = 2x^2 + x - 1$ (6mks)

b) Using your graph solve the following equations (i) $2x^2 + x - 1 = 0$ (2mks)
(ii) $2x^2 + x = 0$ (2mks)

19. The following were marks scored in a mathematics test by 40 form 3 students.

Marks	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99
students	3	3	2	5	7	12	3	2	2	1

a) Calculate the mean mark 3mks

b) Estimate the median mark 3mks

20. a triangle with the vertices at A (5,-2) B(3,-4) and C(7,-4) is mapped onto a triangle with vertices A'(5,12) B'(7,-10) and C'(3,-10) by an enlargement. Find the linear scale factor and the Centre of enlargement.

6mks

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