



DATE DONE INVIGILATOR DATE RETURNED DATE REVISED

MATHEMATICS
FORM 1
CAT 1 TERM 3
TIME 2½ HOURS.

INSTRUCTIONS

- ❖ Write your name, admission number, stream and class number in the spaces provided above.
- ❖ This paper consists of two sections: Section I and Section II.
- ❖ Answer all the questions in both sections.
- ❖ Show all the steps in your calculations, giving your answer at each stage in the spaces provided below each question.
- ❖ Marks are given for correct working even if the answer is wrong.

FOR EXAMINER'S USE ONLY

SECTION I

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	TOTAL

SECTION II

17	18	19	20	21	TOTAL

GRAND TOTAL	
------------------------	--

SECTION 1 (50 MARKS)

1. Evaluate

(3mks)

2. The total cost of covering a room with square tiles is ksh.60,000. If the labour cost is ksh.15,000 and the room has 50 rows of 20 tiles each. Find;

(a) The actual cost of the tiles.

(2mks)

(b) The cost of one tile.

(2mks)

3. Classes in a school start at 8.20 a.m and end at 4.20 pm. Tea and lunch break take a total of two hours. If there are eight equal lessons in a day, how long is each lesson? (3mks)

4. Find the ratio of a:b:c, if $a=5b$, $3b = 2c$ (3mks)
5. A dishonest person mixed 20ml of water having density 1000kg/m^3 with 1 litre of milk that has density 1.020g/cm^3 . Calculate the density of the mixture in kg/m^3 . (3mks)
6. Calculate the perimeter of the figure below. (take $\pi = 3.142$) (3mks)
7. A cylindrical can of diameter 28cm and height 60cm is filled with water using a cylindrical jar of diameter 14cm and height 8cm. how many jarfuls will fill the can?
($\pi = \frac{22}{7}$) (3mks)

8. Simplify $\frac{Mp - np + mq - nq}{Mq - nq - mp + np}$ (4mks)

9. Without using tables evaluate $\frac{0.49 \times 0.84 \times 6.25}{0.07 \div 0.49 \times 25}$ (3mks)

10. Momanyi is thrice as old as his son. In four years time the sum of their ages will be 80 yrs. How old is Momanyi now? (3mks)

11. Find the area of the shaded region in the figure below.

(3mks)

12. In 2007 parliamentary election, only 55% of the voters in constituency of 85,000 cast their votes. Of the votes cast A received 48%, B received 32% and C received the remainder. How many votes did C receive? (3mks)

13. Madam Principal's car petrol tank was $\frac{3}{5}$ full when she left her house for school. By the time she got to school, the tank was $\frac{2}{8}$ full. How much more petrol does she need to get back to her house? (3mks)

14. (a) Express 10,500 in terms of the prime factors. (2mks)

(b) Determine the smallest positive number p such that $10500p$ is a perfect cube. (3mks)

15. Find the value of x in the equation. (2mks)
 $3 - 2x = 9$

16. John bought $2\frac{1}{2}$ kg of meat. Half of the meat was cooked for supper and a quarter of the remainder used to make burgers for the following day's breakfast. How much meat in grams was left? (2mks)

SECTION 11 (30 MARKS)

17. A farmer had 540 bags of maize each having a mass of 112 kg. After drying the maize the mass decreased in the ratio 15:16.

(a) Calculate the total mass lost after the maize was dried. (5mks)

(b) A trader bought and repacked the dried maize in 90kg bags. He transported the maize in a lorry which could carry a maximum of 120 bags per trip. Determine the number of trips the lorry made. (5mks)

18. (a) A school water tank has a radius of 4.2m and a height of 900cm. how many litres of water does it carry when full? (5mks)

(b) If the school used 10,000 litres of water a day, approximately how many days will the fully tank last? (5mks)

19. (a) The shaded region in the figure below shows the area swept out on a flat windscreen by a wiper. Calculate the area of the region. (4mks)

(b) Find the surface area of a triangular prism shown below. (4mks)

(c) Find the volume of the prism. (2mks)

