NAME.. ADM NO...............................

SCHOOL... CANDIDATES SIGN...............

DATE ....

121/1
MATHEMATICS ALTA.
FORM 1
TIME: 2 ½ HOURS

END OF TERM (III) EXAMINATION -2019
Kenya Certificate of Secondary Education (K.C.S.E)
121/1
MATHEMATICS ALTA.
FORM 1
TIME: 2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

- Write your Name, Admission number and Name of your school in the spaces provided
- Answer ALL questions in the spaces provided in the question paper
- This paper consists of question.

Question	Maximum score	Candidate's Score
1 – 21	100	

This paper consists of 12 printed pages .
candidates should check the question to ensure that all pages are printed
as indicated and no questions are missing.

SECTION I(50MKS)
Answer all the questions in this section.

1. Evaluate:
$$\frac{5 \times -2 \div 2 - 7}{12 - 2(8 \div 3)}$$
(3mks)

2. A man is 3 times as old as his daughter. In 12 years, time he will be twice as old as the daughter. Find their present ages. (3mrks)

3. A square floor is covered by a number of whole rectangular tiles of sides 60cm by 48cm. Calculate the least possible area of the floor in square metres. (3mrks)

4.   Convert the following recurring decimal $0.1\dot{2}\dot{3}$ into a fraction.   (3mrks)

5.   Using a mathematical table evaluate.
      $\sqrt{0.006971} + 463.1^2$ (4mrks)

6.   The exterior angle of a regular polygon is $(x-50°)$ and the interior angle is $(2x+20°)$. Find the number of sides of the polygon.   (3mrks)

7.   Find the angle subtended at the centre by an Arc of length 22cm radius 70cm.   (3mks)

8.   Evaluate

$$\frac{\frac{1}{2}\ of\ 3\frac{1}{2}+1\frac{1}{2}\left(2\frac{1}{2}-\frac{2}{3}\right)}{\frac{3}{4}\ of\ 2\frac{1}{2}\div\frac{1}{2}}$$

9.   A Kenyan company received Us dollar x. The money was converted into Kenyan shillings in a
bank which buys and sells foreign currency as shown.

	Buy (Ksh)	sell(Ksh)
1 sterling pound	125.78	126.10
1 US dollar	75.66	75.86

a)If the company received Ksh 15132000. Calculate the amount ,x, received in US dollar.(2mrks)

b) The company exchanged the above Kenya shillings into sterling pounds to buy a car in Britain .
Calculate the cost of the car.   (2mrks)

10. A car left Kisumu towards Isiolo on Friday at 1830hrs and arrived Isiolo at 0630hrs the next day. Find the duration of the journey. (2mrks)

11. Ali, Juma and Hassan share the profit of their business in the ratio 7:3:9 respectively. If Juma receives sh. 60,000, how much profit did the business yield? (3mrks)

12. Four men can till a piece of land in six days. How long would it take two men to till the same piece of land? (3mrks)

13. A sales lady earns a basic salary of Kshs 18,000 p.m. She is also entitled to a commission of 10% for goods sold above ksh. 100,000. In the month of May, she sold goods worth Ksh 250,000. Calculate the total salary she got. (3mrks)

14. Express each of the following number as a product of prime factor in power form.
   (i)   6936   (2mrks)

   (ii)   2040   .   (2mrks)

15. . A wholesaler sold a cell phone to a retailer making a profit of 20%. The retailer later sold the cell
        phone for sh. 3120 making a profit of 30%. Calculate the amount of money the wholesaler had
        paid for the cellphone.   (3mks)

16.   The parallel sides of a trapezium are 9.5cm and 4.5cm respectively. If the perpendicular distance
       between the parallel sides in 5cm, find the area of the trapezium.   (3mrks)

17.   A construction company requires to transport 288 tonnes of stones to sites P and Q. The company pays Sh. 48,000 to transport 48 tonnes of stones for every 28km. Joyce transported 96 tonnes to site P, 56 km away.

(a) Find how much she was paid.   (3mks)

(b) Joyce spends Ksh.6000 to transport every 8 tonnes of stones to site P. Calculate her total profit.   (3mks)

(c) Kimani transported the remaining stones to site Q, 84km away. If he made 44% profit, find his transport cost.   (4mks)

18. (a) Express as a single fraction (3mks)

$$\frac{3x-4}{3} - \frac{2x+4}{8}$$

(b) Simplify completely (3mks)

$$\frac{a^2 + 3ab - 2ab - 6b^2}{2a - 4b}$$

(c) Solve for x (4mrks)

$$\frac{x+2}{4} - \frac{x+3}{5} = \frac{x+4}{6}$$

19. a) Using a ruler and a pair of compasses only construct triangle ABC such that AB=7cm, angle ABC= 45^0 and BC = 6.8cm (3mrks)

b) Bisect BC and AB and let the bisectors meet at point O. Using O as the centre and OA as the radius, draw a circle . (3mrks)

c) Measure the radius of the circle. (1mk)

d) Drop a perpendicular from point A to BC hence, calculate the area of triangle ABC. (3mrks)

20.   A trader bought 8 cows and 12 goats for a total of Ksh.294,000. If he had bought I more cow and
3 more goats he would have spent Ksh.337,500.
(a) Form two equations to represent the above information.   (2mks)
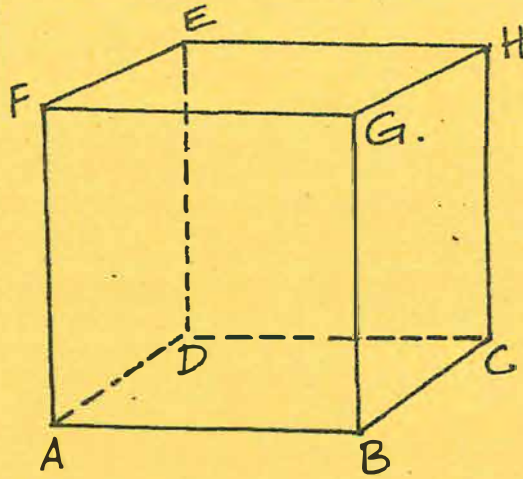

(b) Determine the cost of a cow and that of a goat.   (3mrks)

(c) The trader sold the animals he had bought making a profit of 40% per cow and 45% per goat.
(i) Calculate the total amount of money he received.   (3mks)

(ii) Determine his profit in Kenya shillings.   (2mks)

21. The figure below represents a solid cuboid ABCDEFGH with a rectangular base. AC=13cm, BC= 5cm and CH = 15 cm.

a) Determine the length of AB   (1mk)

b) Calculate the surface area of the cuboid.   (3mrks)

c) Given that the density of the material used to make the cuboid is $7.6g/cm^3$,calculate its mass in kilogram's   (4mrks)

d)Determine the number of such cuboid that can fit exactly in a container measuring 1.5m by 1.2m by 1m.   (2mrks)