GATITU SECONDARY SCHOOL P.O BOX 327-01030 GATUNDU

FORM 2 END OF TERM ii MATHEMATICS EXAM 2016

TIME 2 ½ HRS

NAME.....ADM.....

INSTRUCTIONS

(i)ANSWER ALL the questions in section A and any five in section B.

(ii) Show your workings below each question.

1 Work out $\frac{¼ \text{ of } 2 + 3¾ \div 3/8 - 4½ \times 3\ 1/3}{2\ 4/5 \times 1\ 3/7 - 4 \div 2/3 + 3/5 \text{ Of } 15}$ (4mks)

2 A line l_1 passes through the point P(-1,2) and Q (2 ,-7). Find the equation of a line which is perpendicular to line L_1 and passes through point R(5,5) (3mks)

3 Find the L C M and G C D of 24, 36 and 50 (3mks)

4 Kamau spent 2/5 of his salary on food and 3/8 on paying school fees for his children. If he remained with ksh 12,300, find the amount he spent on food. (4mks)

5 It takes 30 workers 6 days working 8 hours a day to harvest maize in a farm. How many days would 50 workers working 6 hours a day take to harvest the maize. (3mks)

6 A Kenyan businessman bought goods from Japan worth 5,900,000 Japanese yen. On arrival in Kenya, a custom duty of 20% was charged on the value of goods. The exchange rates were as follows;

1 US$ = 118 Japanese yen

1US$ =76 Kenyan shillings

Calculate the duty in Kenyan shillings (3mks)

7 Solve the equation $\frac{x-2}{3} - \frac{3-x}{4} = \frac{x-2}{2}$ (4mks)

8 In a form two class there are 5 more boys than girls. On a certain day one-quarter of the boys and one –fifth of the girls went for games . If 8 students from this class went, find the number of students in the class. (3mks)

9 Given the equation $m= 1/4\{3h^2 +8ah +3a^2\}$ calculate the exact value of m when h=20 and a=-5 (3mks)

10 Use mathematical tables to evaluate (3mks)

$2.341^2 + \sqrt{549}$

11The area of a sector of a circle radius 3cm is $22cm^2$. If the sector subtends an angle of Q^0 at the center of the circle, calculate the value of Q (π=22/7) (3mks)

12 Find the ratio p : r if p :a = 1: 2, a :b =2: 3, b: c = 5: 1, c:r =3 :2 (3mks)

13 Two similar containers hold $2000cm^3$ and 6.75litres respectively. If the smaller container is 16cm in diameter, what is the radius of the larger container. (3mks)

14 Simplify; $\dfrac{49a^2 - 9b^2}{14a + 7ab + 6b + 3b^2}$ (4mks)

15 Use factors to evaluate $\sqrt[3]{\dfrac{0.064 \times 125}{347}}$ (4mks)

SECTION B ANSWER **ANY 5** (50MKS)

16 A trader bought 5 exercise books and 7 pens at a total cost of ksh 170 from a shop. On the same day he decided to buy 13 exercise books and 4 pens at a total cost of ksh 300.
Taking the cost of one exercise book be ksh X and that of a pen sh y .Form two equations in x and y.(1mk)

(b) Determine the cost of one exercise book and the cost of one pen. (3mks)

(c)The trader sold all the pens at ksh 165 to a shopkeeper. Calculate the percentage profit that the trader made. (3mks)

(d) If the trader sold all the exercise books generating a loss of 20%, determine the amount the trader got after selling all the exercise books. (3mks)

17The relation between speed and time is given by the formula $V = 4t + 5$.
The table below gives some values of V and t.

t	0	1	2	3	4	5	6
V	5	9	13				

(a)Complete the table (2mks)

(b) Draw a graph of V against t (3mks)

(c) use your graph to find;

(i) V when t =2.5

(ii) V when t =4.5

(iii) T when V =10

(iv) T when V =15

(v) V when t =0

(1 mk each)

18 Three ships A, B and C are such that the bearing of B and C from A is 060^0 and 030^0 respectively. An island T is due West of C and due North of A. It is further given that BC = CA = 30 km.
Make a scale drawing to show the relative positions of the three ships and the island using a scale of 1cm to represent 5 km. (4mks)

Hence find;

(a) The distance between A and B (2mks)

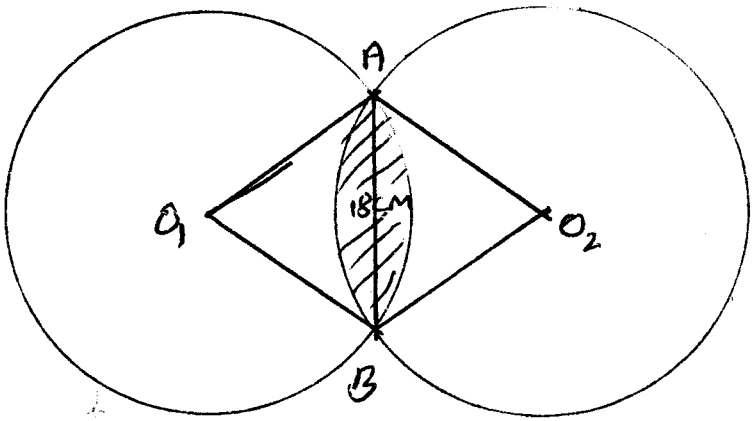
(b) The bearing of the island T from A (2mk)

(c) The distance between C and the island T (1mk)

(d) The bearing of B from C (1mk)

(e) The distance between the island T and A (1mk)

19 Find the common area between the two intersecting circles in the figure below. The circles with centers o_1 and o_2 have radii 18cm and 12cm respectively and the chord AB is 18cm long. (10mks)



20 Use a ruler and a pair of compasses only construct triangle P, Q ,R in which PQ =5cm, PR =4cm and angle PQR =30^0 (3mks)

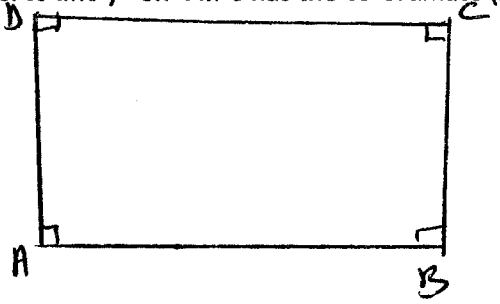
(i) Measure RQ (1mk)

(ii) Angle PRQ (1mk)

(iii) Construct a circle centre O to pass through vertices P,Q and R (3mks)

(iii) Calculate the area of the circle (2mks)

21 In a rectangle ABCD, the equation of the line AB is 3y=x +6.The x co-ordinate of A is -3. The line AD is parallel to line y +3x=7.If C has the co-ordinate (2,6),determine;



(i)The equation of line AD (2mks)

(ii)Equation of line BC (2mks)

(iii)Equation of line CD (2mks)

(B)The co-ordinates of A ,B and D . (4mks)