**GATITU MIXED SECONDARY SCHOOL**

 **END OF TERM I EXAMS NAME…………………………………………**

 **FORM 2 2013 ADM.NO…………….**

 **MATHEM ATICS DATE…………….**

 **SECTION 1 (50MKS)**

(Answer *all the questions in the spaces provided*)

1. Find the L.C.M and G.C.D of 234, 36 and 50 (3mks)

2. Work out -4+(-3)×(-2)-(-3)

 -3 ×-6+-1×3 leaving your answer as a fraction (3mks)

3. In the diagram below QP is parallel toXY.

 QP=1.5cm, XY=4.5cm, OX=8.4cm QY=9.0cm

 Q 1.5cm P

 O

 Y

 X 4.5cm

 Calculate the lengths

 i) OP (2mks)

 ii) OQ (2mks)

4. Express 10500 in terms of its prime factors and index / power joint (1mk)

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

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

7. A Kenyan businessman bought goods from Japan worth 5,900000 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

 1 us$ = 76 Kenya shillings

 Calculate the duty in Kenya shillings (3mks)

8. A shirt whose marked price is Ksh. 800 is sold to a customer after allowing him a discount of 13 % . If the trader makes a profit of 20 % Find how much the trader paid for the shirt (3mks)

9. Solve the equation (3mks)

 $\frac{x-2}{3}-\frac{3-x}{4}=\frac{x-2}{2}$

10. If a=3, b=4 and c=1.5, find $\sqrt{ba}$² (3mks)

 1.5

11 B

 A 60$°$

 E

 D 110$°$

 F G

In the figure above, AB is parallel to DE, DE bisects angle BDG< Angle DCF =60$°$ and angle CGF=110$° $

 Find

 a) < CDF (2mks)

 b) <ABD (2mks)

 (Give the reasons for your answer)

12. To fence a side of her farm , A farmer requires 25 posts placed 4m apart. calculate the length of the side she intends to fence , Hence determine the number of posts required if they were to be placed 2m apart (4mks)

13. Use mathematical table to evaluate (3mks )

 2.341²+√549

14. The volume of two similar cans are 96 cm³ and 1500cm³. Find the ratio of

 a) Their heights (2mks)

 b) The area of the curved surfaces (2mks)

15. The interior angles of a hexagon are2 χ$°$,1/2χ$°$, χ+40$°$, 110 $°$,130$°$ and 160$°$. Find the value of the smallest angle.(3mks)

16. The area of sector of circle of radius 3cm is 22cm². If the sector subtend s an angle of $θ°$ at the center of the circle , Calculate the value of $θ°$ (use πas22/7 2mks)

 **SECTION 2 (50MKS)**

 *(Answer any five questions in spaces provided )*

17. The figure below shows a solid prism whose section is a right angled triangle

 i) Calculate the length of h (1mk)

 ii) Determine the surface are of the prism (4mks)

 iii) Calculate the volume of the prism in m³ (3mks)

 iv) If the density of the material used in making the prism is 850 k g /m³ ,Calculate the mass of the prism (2mks)

18. A trader bought5 exercise books and 7 pens at a total cost of sh. 170 from a shop. At the same day he later decided to buy 13 exercise books and 4 pens at a total cost of sh. 300

 a) Taking the cost of one exercise book as sh. X and that of a pen as sh. Y form two equations in X and Y (1mk)

 b) Determine the cost o f one exercise book and the cost of a pen (3mks)

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

 d) If the trader sold al the exercise books to shopkeeper generating a loss of 20%, Determine the amount of the trader go after selling all the exercise books (3mks)

19. Three ships A,B C are such that the bearing of B and C from A is 060$°$ and 030 $°$ respectively . An island T is due west and due north A. It is further given that BC=CA =30km. Using a scale 1cm to represent 5k m ,make a scale drawing to show the relative position of the three ships and the island T.(4mks)

1. The distance between A and B (2mks)
2. The bearing of the island T from A (1mk)
3. The distance between C and the island T
4. The bearing of B from C (1mk)
5. The distance between the island T and A (1mk)

20. Two business partners Kamau and Jane contributed ksh. 112,000 and 128,000 respectively to start a business. They agreed to share the profit as follows

1. 20% to be shared equally
2. 20% to be share din the ratio of their contribution
3. 60 % to be retained for the running of the business

If their total profit for the year 1990 was ksh. 86400. Calculate

a)

1. The amount each got in the 20% the y shared equally. (2mks)
2. The ratio of kamau to Jane contribution in its simplest form (1mk)
3. The amount received by Kamau (2mks)
4. The amount received by Jane (2mks)

b) The amount retained for the running the business to the nearest thousand Kenyan shillings (3mks)

21. The relation between the 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) By using a scale of : 1cm represents 1unit inχ axis

 1cm represents 5 units inγ axis (3mks)

 Draw a graph of V against t

 c) Use your graph to find:

1. V when t=2.5
2. V when t=4.5
3. t when V=10
4. t when V=15
5. V when t =0 (5mks)

22. The points P (1,6) Q (2,2) R(1,1) and S(4,2 ) are the vertices of quadrilateral PQRS.

1. On the graph paper plot the points PQRand S and hence draw the quad lateral PQRS (2mks)
2. The point P’Q’R’S’ are the images of PQRS respectively under a rotation of about ¼ turn about ht e origin (1/4 turn =90$°$. On the same grid draw quadrateral P’Q’R’S’ and state the coordinates of its vertices (3mks)
3. The points P’’Q”R”S” are the images of P’Q’R’S’ under a reflection in the x axis . On the same grid draw quadrateral P”Q”R”S” and states the coordinates of its vertices (3mks)
4. Quadrateral P”Q”R”S” is the image of PQRS under a certain reflection . On your graph draw the mirror line MM for the ref lection and state its equation (2mks)

23 . A line L passes through point (3,1 ) and is perpendicular to the line 2y=x+5

 Determine the equation of line L (3mks)

 b) Fin the equation of the line passing through a given point and parallel to the given line (5,2

 5y-2x-115=0 (3mks)

 c) Solve for $9^{4x}$÷$3^{2x}$= 2187 (2mks)

 d) Simplify (2mks)

 $\sqrt[3]{27xx^{3}}y^{9}$

 $x^{6}y^{3}$

 **All the best …… Mrs. Kuria……**