MIDTERM EXAM FORM 2 TERM 1 2017

MATHEMATICS

1. Use logarithm tables to evaluate.

$\sqrt{(\frac{2.935 ×0.0765}{32.74}}$) (4mks)

1. Write the following in index rotation

i)log m=n (1mk)

ii)log 9 = x (1mk)

1. Write the following in logarithmic rotation. (2mk)
2. Mb  = 3
3. 24 = 16
4. The figure below shows a triangular prism ABCDEF. Draw its net. (2mks)
5. Interior angles of a hexagon are zx0, ½x0 , 1100, 1300 and 1600. Find the value of the smallest angle. (3mks)
6. Simplify (3mks)

$$\frac{2½+\frac{2}{3}of 3\frac{3}{4}-4\frac{1}{6}}{1\frac{1}{4}- 2\frac{2}{5}÷1\frac{1}{3}+3\frac{3}{4}}$$

1. Simplify (3mks)

$\frac{22-14}{6x-2}$ - $\frac{4^{2}x-6-12}{72÷-8 x3 }$

1. Solve for x in the equation

$\frac{x-1}{x}$ - $\frac{2x+1}{3x}$ = $\frac{2}{3}$

1. A Kenyan company received US dollars 100,000. The money was converted into Kenyan shilling in a bank which buys and sells foreign currencies as follows.

 Buy sell

1 US Dollar 77.24 77.44

1 sterling pound 121.93 122.27

1. Calculate the amount of honey in Kenyan shillings the company received. (2mks)
2. The amount above was converted to sterling pounds. Calculate the amount in sterling pounds. (1mk)
3. Solve the following equations. (3mks)

2x+5y =19

4x + y = 23

1. Without using mathematical tables or a calculator, evaluate (3mks)

$$\sqrt{\frac{0.0625×2.56}{0.25×0.08×0.5}}$$

1. Use reciprocal tables to evaluate (3mks)

$\frac{3}{14.56}$ + $\frac{9}{0.456}$

1. A shirt whose marked price is sh 800 is sold to a customer after allowing him a discount of 13%. If the trader made a profit of 20%. Find the cost of the shirt. (3mks)
2. Solve for x in the following equations
3. (75)x = (74) $÷$ 72 (2mks)
4. 8122x 27x = 729 (3mks)

9x

1. Simplify the following expression

a)$\sqrt[5]{32y^{10}} k^{15} z^{10}$

 $\sqrt[4]{16y^{12} k^{16 }}z^{4}$ (2mks)

 b)r s2 t3 x r4 s5 t-6 x r7 s8  t-9

 r10 s11 x t-12 x r13 s-14 t15 (3mks)

1. Calculate the angles marked x and y in the figure below in which AB is parallel to DE, DE bisects angle BCG, angle DCF = 600 and angle CFG = 1100.
2. Without using logarithms, evaluate (2mks)

0.034 x 1.23 x 3.5

2.37 x 0.056

 18. The figure below shows a cylindrical tin without a lid.

1. Find the area of the material used to make the container. (3mks)
2. If the container has water to a height of 5cm, calculate the area of the container in contact with water. (3mks)

 19.Write the following numbers in the farm 10x

 a) 43.72 (1mk)

1. 0.3529 (1mk)

 20. Simplify the following

 a) 1.234 + 2. 479 (2mks)

1. 5.3471 – 4 .6523 (2mks)

21. Find the gradient of c line that passes through the given points.

 a) A (3,2) and B (-1,1) (2mks)

 b)k (0.5, 0.3) and L (-0.2, -0.7) (2mks)

22.find the equation of a line that passes through the given point and of the given gradient.

(2,3) m= ½ (2mks)

SECTION B

24. a) Using a ruler and a pair of compasses only, construct triangle PQR, PR = 8cm, < QPR = 600, QR = 6cm and < QRP is acute. (3mks)

 b)measure PQ (1mk)

1. construct the bisector of QPR to meet QR at N. Measure PN. (3mks)
2. Drop a perpendicular to PR from Q. to meet PR at M. (2mks)
3. measure QM (1mk)

24. The boundaries PQ, QR, RS and SP of a ranch are straight lines such that ; Q is 16km on a bearing of 0400 from P;R is directly south of Q and east of P and S is 12km on a bearing of 1200 from R.

 a)Draw a sketch to represent the above information. (2mks)

b)using a scale of 1cm to represent 2km, show the information. (2mks)

 c) From the scale drawing , determine

 i)Distance, in kilometers, of P& S (2mks)

 ii) The bearing of P from S (2mks)