**NAME: ………………………………… ADM NO: ……… CLASS: ………….**

**ANESTAR SCHOOLS**

**MATHEMATICS**

**FORM 1**

**END OF TERM 3 EXAM – 2022**

**TIME: 2 HOURS**

**SECTION A (50MARKS)**

**Attempt all the questions in the spaces provided.**

1. Without using a calculator, evaluate; (3 mks)

 $\frac{5}{6}$ -1 $\frac{2}{3}$ + 1$\frac{1}{4}$ x 1$\frac{5}{7}$

2. Use substitution method to solve the following simultaneous equations. (3 mks)

 3x + 2y = 23

 2x – y = 6

3. A fruit juice dealer sells the juice in packets of 300ml, 500ml and 750ml. Find the size of the

 smallest container that can fill each of the packets and leave a remainder of 200ml.(3 mks)

4. The size of an interior angle of a regular polygon is 150o. Find the number of sides of the

 polygon. (3 mks)

5. Find the area of the shaded region in the figure below (use II = 3 .14) (3 mks)



6. Solve the equation; (3 mks)

 x + 1 - x – 3 = 4

 2 3

7. Show that 8260439 is exactly divisible by 11 using divisibility test. (2 mks)

8. Without using a calculator, evaluate; (3 mks)

 $\frac{36-8×-4-15÷-3}{3×-3-8(+6-\left(-2\right))}$

9. The figure below (Not drawn to scale) shows the cross section of a metal bar of length 3

 metres. The ends are equal semi circles. Determine the mass of the bar in kg if the density of

 the metal is 8.87g/cm3 (3 mks)

20mm

70mm

10 . A Kenyan bank sells and buys foreign currency as show in the table below.

|  |  |  |
| --- | --- | --- |
|  | Buying (kshs) | Selling (kshs) |
| 1 Us dollar | 95 .34 | 95.87 |
| 1UK pound | 124 .65 | 125.13 |

 A tourist arrived in Kenya with 15000 pounds and converte4d into Kenya shillings at a

 commission of 8% . He later used half of the money before changing the balance into

 dollars at no commission. Calculate to the nearest dollar the amount he received.

(3 mks)

11. Three years ago, John was three times as old as Jane. In two years time, the sum of their

 ages would be 62 years. Calculate the difference in their ages five years ago. (3 mks)

12. In the figure below $<$MNO = 54o and $<$PLM = 50o, PN = NM and PO is parallel to LM.

 Find the value of $<$LPM (3 mks)

O O

L

M

N

P

50o

54o o

13. Use the table of squares and square roots to evaluate; (3 mks)

 0.000125

 0.02252

14. Wanjiru, Atieno and Jeptoo shared the profit of their business in the ratio of 8:7 :9

 respectively. If Atieno received sh 63,000, find how much profit the business realised.

(3 mks)

16. Five men each working 10 hrs a day take two days to cultivate acre of land. How long will

 two men each working six hours a day take to cultivate three acres of land. (3 mks)

16. A wholesale sold a radio to a retailer making a profit of 20% . The retailer later sold the

 radio for Kshs 1560 making a profit of 30%. Calculate the amount of money.

 (3 mks)

17. Sketch the net of the solid below and find its total surface area. (3 mks)

 H

 E

G

 F

 C 3cm 4cm

 D B

 A

 5cm

**SECTION B**

**ATTEMPT ANY 3 QUESTIONS**

17. Measurement of a maize filed using baseline XY were recorded as shown below.

 Measurements are in metres. Take XY=400m

 y

 360 80 to Q

 To R 80 280

 To S 160 200

 40 200 to P

 X

(a) Using a scale of 1cm to represent 40m, draw the map of the coffee farm. (4mks)

(b) Calculate the area of coffee farm in hectares. (6mks)

18. (a)Using a ruler and a pair of compasses only construct a triangle ABC such that AB = AB=4cm, BC=5cm. and <ABC=120o. Measure AC. (4mks)

 (b) Construct a circle which passes through vertices of a triangle ABC. Measure the shortest

 distance from the centre of the circle to point B. (4mks)

 (c ) Calculate the area of the circle draw. (2mks)

19. The travel timetable below shows the departure and arrival for a bus plying between two towns

 A and E, 300 kilometres apart.

|  |  |  |
| --- | --- | --- |
| **Town** | **Arrival** | **Departure** |
| ABCDE | 1000h1310h1510h1600h | 0830h1020h1340h1520h |

i. (a) How long does the bus take to travel from town A to E in minutes. (2mks)

 (b) How long does it take at town C in seconds? (1mk)

 (c) At what time does it arrive at town E in 12 hour system. (1mk)

 (d) What is the average speed for the whole journey (3mks)

ii. A service vehicle which left Mombasa for Nairobi at 1010h had a puncture after travelling for

 4h 20 minutes. Fixing a new tyre took 35 minutes. The vehicle then travelled for another hour

 20 minutes to reach Nairobi at what true did it arrive at Nairobi? (3mks)

20. (i) Calculate the volume of the log of wood below. (2mks)

 28cm

 5.6m

(b) If the density of the wood is 0.5g/cm3. Find the mass in Kg (2mks)

(c)(i) Calculate the surface area of the log of wood in cm2. (4mks)

(ii) The log was painted. If the cost of paint was Ksh 50 per cm2. Calculate the total cost of the

 paint. (2mks)

21. Three towns A and B are situated in such that away B is on a bearing of 280o from town C. If

 town A is 190km from town C and town B is 160km from town C. If town A is 190km

 from town C and town B is 160km from town C on scale.

(a) Draw the position of three town A, B and C on scale. (4mks)

(b) Find the bearing of A from B (2mks)

(c) Find the distance between A and B. (2mks)

(d) A motorist travelled from A to B then to C and back to A at an average speed of 80km/h. Find

 the time taken.(2mks)