Name_____ Index No._____

Class_____

Candidate's Signature_____

2011/1   Date _____

PI MATHEMATICS
Paper 1
PTE MOCK EXAMINATION
MARCH / APRIL 2018
TIME: 2 ¼ HOURS

PRIMARY TEACHER MOCK EXAMINATION
MATHEMATICS
2 ¼ HOURS

INSTRUCTIONS TO CANDIDATES
   a) *Write your name, Index number, class, signature and date in the spaces provided above.*
   b) *The question paper has of **TWO** sections: **A** and **B**.*
   c) *Answer **ALL** the questions in section **A**.*
   d) *Answer any **FIVE** questions from section **B**.*
   e) *Answers and workings in both sections **MUST** be written on the question paper in the spaces provided below each question.*
   f) *Do **NOT** remove any pages from this booklet.*
   g) ***Candidates should answer the questions in English**.*

FOR EXAMINER´S USE ONLY

SECTION	Question	Maximum score	Candidates' Score
A	1 – 20	60	
B	21	8	
	22	8	
	23	8	
	24	8	
	25	8	
	26	8	
TOTAL SCORE			

This paper consists of 15 printed pages
Candidates should check the paper to ascertain that all the pages are printed as indicated and that no questions are missing

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SECTION A (60 MARKS)

Answer all the questions in this section in the spaces provided.

1. Evaluate:

    $$\frac{1305 \div (670 - 235) + 6 \times 780 \div 13}{152 + 258 \div 6 - 162}$$

    (3 marks)

2. Evaluate:

    $$\frac{\frac{1}{2} + \frac{1}{3}}{\frac{1}{7} \text{ of } (\frac{2}{3} - \frac{1}{6})}$$

    (3 marks)

3. Evaluate

    $$\frac{3.4 - (0.28 \div 0.2) + 0.8}{0.7 \times 0.02}$$

    (3 marks)

4. Solve

    $$\underline{4z + 2y - x}$$

$$2y - 3x + z \qquad \text{given } x = -2, \ y = -6 \text{ and } z = +4 \qquad \text{(3 marks)}$$

5. Find the value of P in the expression
$$\frac{P-1}{5} - \frac{2p-12}{2} \qquad \text{(2 marks)}$$

6. The area of a right angled triangle whose height is equal to the length of its base is 40.5cm^2. What is the perimeter of the triangle correct to 3 significant figures? (3 marks)

7. Kaya ran 2000m race at a speed of 20km/h. If she started the race at 0630h, what time did she finish the race? (2 marks)

8. Paul borrowed sh. 50,000 from a bank which charged a compound interest rate of 8% and stayed with the money for 1 ¾ years. How much did he pay at the end of 1 ¾ years?(3 marks)

9. The ratio of Mwau's earnings to Joe's earnings is 5:3. If Mwau's earnings increase by 12% his new figure becomes sh. 5600. Find the corresponding percentage change in Joe's earnings if the sum of their new earnings is sh. 9600. (4 marks)

10. Using a ruler and a pair of compasses only, construct triangle KLM where LM = 10cm, KM

= 5cm and reflex angle KML = 307 ½^0. Measure angle LKM. (4 marks)

11. Boss is an agent whose basic salary is sh. 9700. He is also paid 5 ½% commission on the first sales worth sh. 20,000. He also receives $9^1/_3$% commission on sales above sh. 20,000. How much did he earn on a month, if his total sales were shs. 200,000? (3 marks)

12. A car park decoration is in form of a kite. If the length of the shorter diagonal is 8cm, the area of small triangle is 24cm^2 and the total area of the kite is 52cm^2, find the length of

longer diagonal. (3 marks)

13. The area of a plot on a map is 72cm^2. The actual area of the plot is 72ha. Find the scale of the map. (3 marks)

14. A rectangular tank with a length of 35cm, width 11cm and 20cm high, has the same capacity with a cylindrical container whose height is 50cm. Find the diameter of the container.
(3 marks)

15. The table below shows inland postal charges for ordinary parcels

TYPE OF ARTICLE	MASS	CHARGES	
		sh	cts
ordinary parcels (limit of mass 30kg)	up to 5kg	75	00
	up to 10kg	125	00
	up to 20kg	245	00
	Each additional 1kg or part there of up to 30kg	15	00

Mengo sent 3 ordinary parcels to Mombasa weighing 3kg, 14kg and 26 ½kg. How much did he pay for the parcels? (3 marks)

16. The table below shows the marks of 100 candidates in an examination:

Marks	1 – 10	11 – 20	21 – 30	31 – 40	41 - 50	51 – 60	61 – 70	71 – 80	81 – 90	91 – 100
Frequency	4	9	16	24	18	12	8	5	3	1

Calculate the medium mark of the exam, correct to 2 decimal points. (3 marks)

17. Small tins of height, 12cm and radius 4cm were arranged in lying position (lengthwise) in a

Box; 37 cm long, 35cm wide and 42cm high. How many tins were packed into the box?

(3 marks)

18. Find the 6th number in the sequence;

$^{4}/_{3}$, 1 $^{8}/_{15}$, $^{26}/_{15}$, 1 $^{14}/_{15}$ …………

(3 marks)

19. Two taps X and Y can fill a swimming pool in 30 minutes and 20 minutes respectively. If the two taps are turned on for 7 minutes then tap Y is closed, how long would it take tap X to fill the remaining part?

(3 marks)

20. In the figure below, the area of a triangle CDE = 30cm^2. Lines FE = 21cm, AF = 20cm and BC = 8 cm.
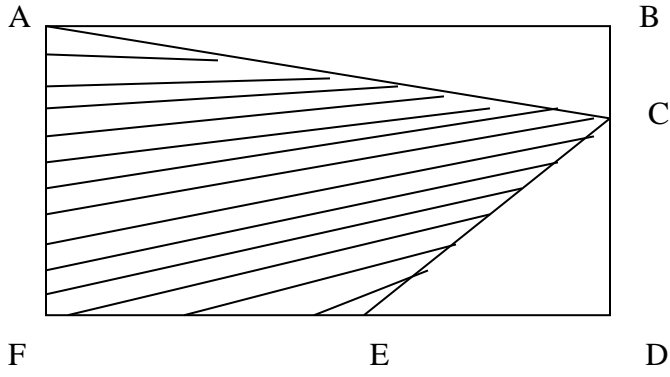
What is the area of the shaded part? (3 marks)

SECTION B (40 MARKS)

Answer any five questions in this section in the spaces provided.

21. The populations of four estates (Ziwani, Bondeni, Salama na Umoja) were as follows;
    Ziwani had 2896 more people than Bondeni, Bondeni had 1750 more people than Salama
    and Ziwani had 1200 people more than Umoja. Salama and Umoja had a total population of
    5878 people.

    a) How many people lived in Ziwani and Bondeni put together?   (4 marks)

    b) If men and women formed 40% of the population in Umoja, Ziwani and Bondeni, how
       many children lived there?   (4 marks)

22. A tank with a rectangular base of 2.4m by 2.8m has a height of 3m. Water flows into the

tank at a rate of 0.5 litres per second.
a) If it initially contains 3600 litres of water, calculate time in hours required to fill the tank.

(5 marks)

b) Find the height of a cylindrical tank with the same capacity if its diameter is 2.1m
(Take π = 22/7). (3 marks)

23. The area of a right – angled triangular flower bed is 176m^2. One of the shorter sides

measures 6m more than the other. The garden is to be fenced with 5 strands of barbed wire.

a) Calculate the length of the shortest side. (4 marks)

b) Workout the length of wire needed to do the fencing. (4 marks)

24. A contractor hired 20 workers, each working for 6 hours a day to complete clearing a field in 16 days. After working for 4 days, the work was suspended for 2 days. To complete the work on time, the contractor hired 28 more workers. How many hours a day did each worker do the work? (8 marks)

25. A trader bought 30kg of type A tea leaves and 50kg of type B tea leaves. Type A cost sh 150 per kg. She mixed the two types to get a mixture whose cost was sh. 105 per kg.

a) What was the cost of 1kg of type B tea leaves?   (2 marks)

b) She sold the mixture in ½ kg packets making 20% profit. Find the profit made in every packet sold.   (2 marks)

c) At what price must another trader who mixes 50kg of type A tea leaves and 30kg type B tea leaves sell her 1kg mixture to make equal profit?   (4 marks)

26. a) i) Using a ruler and pair of compasses only, contract triangle QRS such that QR = 6.4cm, QS = 7.8cm and < SQR = 30^0.

ii) Construct a circum – circle to the triangle. (5 marks)

b) Find the area of the circle. Give your answer correct to two decimal places. (3 marks)