KCPE REVEALED

KENYA NATIONAL EXAMINATIONS

206503

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PREDICTION MASTER

- MATHEMATICS - 2021   **2 hours**

READ THESE INSTRUCTIONS CAREFULLY

1. You have been given this question paper and a separate answer sheet. The question paper contains 50 questions.

2. Do any necessary rough work in this paper.

3. When you have chosen your answer, mark it on the **ANSWER SHEET**, not in this question paper.

HOW TO USE THE ANSWER SHEET

4. Use an ordinary pencil only.

5. Make sure that you have written on the answer sheet

YOUR INDEX NUMBER

YOUR NAME G10

NAME OF YOUR SCHOOL

6. By drawing a dark line inside the correct numbered boxes mark your full Index Number (ie. School Code Number and the three-figure Candidate's Number) in the grid near the top of the answer sheet.

7. Do not make any marks outside the boxes.

8. Keep your answer sheet as clean as possible and **DO NOT FOLD IT.**

9. For each Questions 1 - 50, four answers are given. The answers are lettered **A, B, C, D** in each case only **ONE** of the four answers is correct. Choose the correct answer.

10. On the answer sheet show the correct answer by drawing a **dark line** inside the box in which the letter you have chosen is written.

Example

In the question booklet
19. What is the square of **0.25**?
   A. 2.5   B. 0.0625   C. 0.0025   D. 0.625
   The correct answer is **B**
   19 [A] [B] [C] [D]

In the set of boxes numbered **19**, the box with letter **B** printed in it is marked

11. Your dark line **MUST BE** within the box.

12. For each question **ONLY ONE** box is to be marked in each set of four boxes.

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Covid -19 Always practice social distancing

1. Which one of the following is sixteen million one hundred and sixteen thousand and sixteen and sixteen thousandths in symbols?

   A. 16016116.016
   B. 16116106.016
   C. 16116016.016
   D. 16116016.16

2. What is the place value of digit 5 in the number 6857329?

   A. 50000
   B. Ten thousands
   C. Hundred thousands
   D. Fifty thousand

3. Work out the value of $3.48 \div 25$ to the nearest 2 decimal places?

   A. 0.1392
   B. 7.18
   C. 1.39
   D. 0.14

4. What is the perimeter of a square mat whose area is 0.0036 ha?

   A. 6 m
   B. 24 m
   C. 2400 m
   D. 36 m

5. What is 7:4 expressed as a percentage?

   A. 140 %
   B. 57%
   C. 74 %
   D. 175 %

6. What is three quarters of

   $\frac{3}{19}$ of $(\frac{4}{5} - \frac{1}{6}) + \frac{4}{15} + \frac{1}{4} \times \frac{2}{3}$?

   A. $\frac{2}{5}$

   B. $\frac{8}{15}$

   C. $\frac{4}{5}$

   D. $\frac{37}{90}$

7. Work out: $\dfrac{1.5 + 0.9 \text{ of } 2.5 - 1.42}{0.4 \times 2.5}$

   A. 2.33
   B. 4.58
   C. 5.48
   D. 3.22

8. Tamera bought 5 trays of eggs at sh. 300. She paid sh. 300 for transportation. During the transportation, eggs in one tray broke. She sold the remaining eggs making a 20 % profit. How much more did she sell each egg than she bought?

   A. sh. 18.00
   B. sh. 10.00
   C. sh. 8.00
   D. sh. 5.00

9. Given that $r = 5$, $q = s + 2$, $p = s + 3$, and $s = 4$
   Find twice the value of $\dfrac{r(p - s)}{q(s + q)}$

   A. $\frac{1}{4}$

   B. $\frac{1}{2}$

   C. 4

   D. 8

10. Atieno, Adija and Amina bought some fruits. Amina bought 6 more fruits than Adija. Atieno bought 8 less fruits than twice the fruits bought by Adija. If Adija bought x fruits, which expression gives the total number of fruits bought by the three girls?

    A. $4x - 2$
    B. $4x + 2$
    C. $3x - 2$
    D. $3x + 14$

11. A train left Kisumu on Wednesday 4:32 pm and took $9\frac{4}{5}$ hrs to arrive in Mombasa. When did the train arrive in Mombasa?

    A. Thursday 2:20 a.m
    B. Wednesday 2:20 a.m
    C. Thursday 12:08 a.m
    D. Wednesday 12:08 pm

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12. In the figure below line **EF** and **GH** are parallel. Angle **FEW** = 38° and angle **WGH** = 46°.
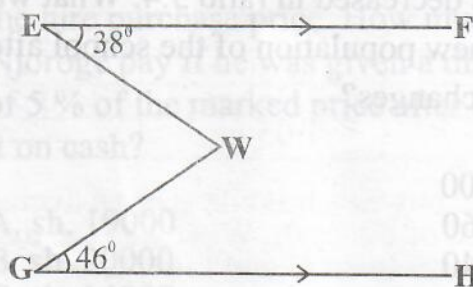
What is the size of reflex angle **EWG**?

A. 84°
B. 184°
C. 276°
D. 134°

13. Lamech bought the following items from a shop:

4 kg of sugar at sh. 140
2½ kg of rice at sh. 80
4 - ½ kg packets of flour @ sh. 50
2 - 500 ml packets of milk @ sh. 50
2 bars of soap for sh. 240

He paid for the items using 3 - five hundred shilling notes. If he was given a discount of 5 %. How much balance did he get?

A. sh. 200
B. sh. 1235
C. sh. 37
D. sh. 265

14. A rectangular farm of length 42 m and width 33 m has the same area as a circular vegetable garden. What is the circumference of the circular garden?
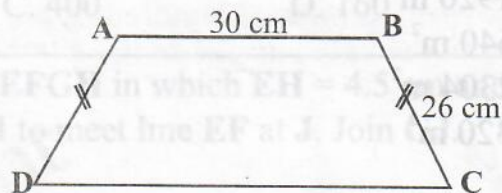
A. 132 m
B. 150 m
C. 66 m
D. 1386 m

15. What is the value of:
$4 \times 3 - (4^2 - 3^2) + 6 \div 12$?

A. $\frac{11}{12}$

B. 5

C. $11\frac{1}{2}$

D. $5\frac{1}{2}$

16. Simplify: $\frac{2}{3}(6x + 9y) - 4(\frac{1}{2}x - 1\frac{1}{2}y) - 2x$

A. 12y
B. 0
C. 14x + 12y
D. 4x

17. In the figure below line **AB** = 30 cm. **BC** = **AD** = 26 cm. The perpendicular height between line **AB** and **DC** is 24 cm.

Find its perimeter.

A. 122 cm
B. 132 cm
C. 112 cm
D. 142 cm

18. What is the next number in the pattern?
3, 5, 8, 13, 21, 34, 55, _____

A. 87
B. 76
C. 91
D. 89

19. What is the value of **y** in the equation:

$\frac{2y + 3}{3} - 3 = \frac{3y + 4}{5}$?

A. 12   B. $2\frac{4}{19}$

C. 42   D. 18

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20. Below are properties of quadrilaterals:
    (i) All sides are equal
    (ii) Opposite sides are equal and parallel
    (iii) Has a pair of parallel lines
    (iv) Diagonals are not angle bisectors
    (v) Diagonals are unequal
    Which properties stated above are shared by rhombus and parallelogram?
    A. ii and iv
    B. i and v
    C. I and iii
    D. ii and v

21. A square garden of area 1600 m² was increased by 20 %. What was the area after increase?

    A. 1920 m²
    B. 640 m²
    C. 2304 m²
    D. 320 m²

22. A metallic rod of radius 7 cm and a height 20 cm was half way immersed in a bucket of red paint. What is the total surface area of the part of the rod that had the red paint?

    A. 594 cm²
    B. 1188 cm²
    C. 440 cm²
    D. 1034 cm²

23. Bonface had a pocket money of sh. 6000. He spent $\frac{1}{3}$ on snacks, $\frac{1}{4}$ of the remainder on clothing and the rest on transport. How much more did he spend on transport than snacks?
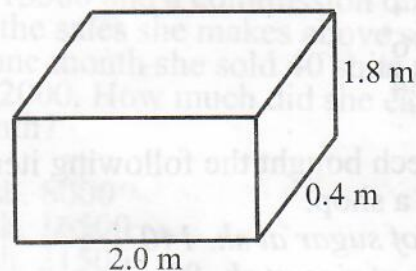
    A. sh. 500
    B. sh. 1000
    C. sh. 2000
    D. sh. 3000

24. In a school of 720 pupils, the ratio of girls to boys was 5:4. In a certain year the girls increased in ratio 5:4 while boys decreased in ratio 3:4. What was the new population of the school after the changes?

    A. 700
    B. 560
    C. 740
    D. 680

25. The tank below is two thirds full of water. How many litres of water are required to fill the tank?

    A. 1440 L
    B. 960 L
    C. 48 L
    D. 480 L

26. Johnstone paid sh. 4800 for a radio after he was given a 20 % discount . How much more would he have paid if he was given a 15 % discount for the same radio?

    A. sh. 6000
    B. sh. 5100
    C. sh. 300
    D. sh. 900

27. What is the total value of digit 5 in the number 60.5043?

    A. 0.04   B. $\frac{4}{1000}$
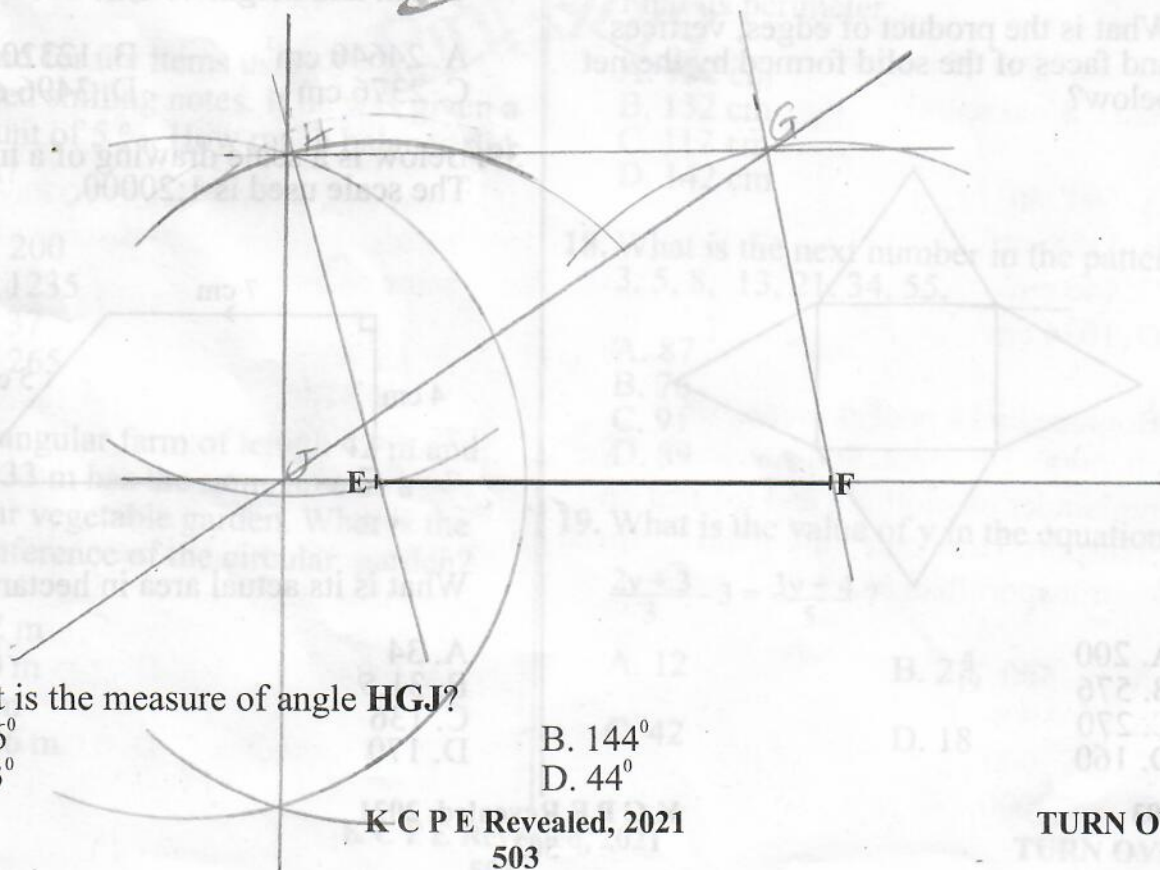
    C. Thousandths   D. 0.0004

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28. The hire purchase price of a T.V set involves a deposit of sh. 8600 and 6 equal monthly instalments of sh. 1900. The marked price is sh. 5000 less than the hire purchase price. How much did Njoroge pay if he was given a discount of 5 % of the marked price after buying it on cash?

A. sh. 19000
B. sh. 20000
C. sh. 14000
D. sh. 14250

29. 24 men could complete digging a farm in 30 days. Some more men were hired such that the work took 10 less days. How many more men were hired?

A. 12   B. 36
C. 16   D. 8

30. The pie chart shows the number of 80 kg bags of different crops Kenga harvested from his farm.
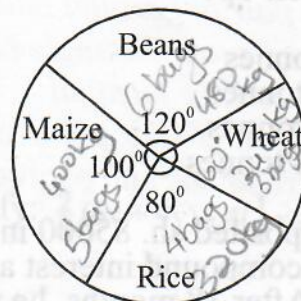
If he harvested 4 bags of rice. How many more kilograms of wheat and maize than beans did he harvest?

A. 2   B. 240
C. 400   D. 160

31. Using line **EF** below. Construct parallelogram **EFGH** in which **EH** = 4.5 cm and angle **EFG** = 100^0. Draw a perpendicular line from **H** to meet line **EF** at **J**. Join **GJ**.

What is the measure of angle **HGJ**?
A. 36^0 B. 144^0
C. 53^0 D. 44^0

32. An empty pick-up weighs 2.85 tonnes. It was loaded with 40 cartons. Each carton contained 120 - 500g packets of washing powder. Each empty carton weighed 400 g. What was the total mass of the loaded pick-up?

A. 5.25 tonnes
B. 5.266 tonnes
C. 4.266 tonnes
D. 5.2504 tonnes

33. Lenny deposited sh. 85000 in a bank that paid compound interest at a rate of 8 % p.a. After 18 months, he withdrew all the money in his account. How much interest had the money earned?

A. Sh. 10472
B. Sh. 95472
C. Sh. 14144
D. Sh. 10200

34. How many groups of hundredths are there in the value digit 4 in the number 68.429?

A. 0.4
B. 4
C. 40
D. 400

35. What is the product of edges, vertices and faces of the solid formed by the net below?
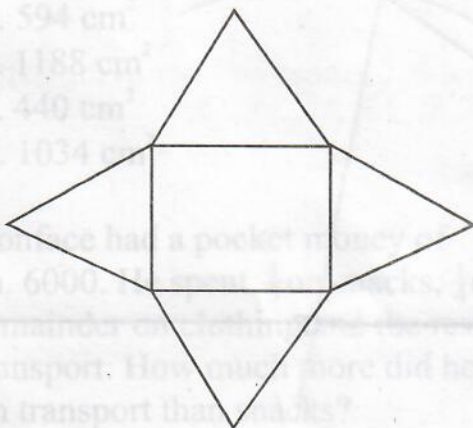
A. 200
B. 576
C. 270
D. 160

36. The table shows the bus timetable from town **A** to town **F**.

Towns	Arrival	Departure
A	——	8:00 a.m
B	8:30 a.m	8:45 a.m
C	11:00 a.m	11:30 a.m
D	12:30 pm	12:30 pm
E	2:45 pm	3:00 pm
F	4:05 pm	——

If the bus was travelling at an average speed of 80 km/h. What was the distance between town **C** and town **E**?

A. 260 km
B. 300 km
C. 280 km
D. 240 km

37. A salesgirl is paid a basic salary of sh. 13500 and a commission of 10 % for the sales she makes above sh. 80000. In one month she sold 40 suits at sh. 2000. How much did she earn that month?

A. sh. 8000
B. sh. 16500
C. sh. 21500
D. sh. 13500

38. What is the volume of a trough of radius 14 cm and height 40 cm?

A. 24640 cm^3 B. 12320 cm^3
C. 2376 cm^3 D. 3496 cm^3

**39.** Below is a scale drawing of a trapezium. The scale used is 1:20000.
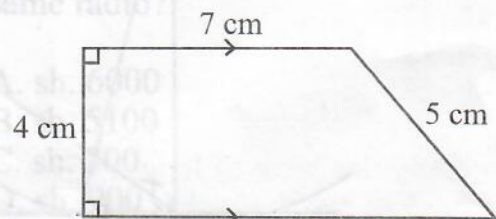
What is its actual area in hectares?

A. 34
B. 31.5
C. 136
D. 170

40. Mary visited her grandmother on 28th December 2011 and went back home on 2nd March the following year. For how many nights did she spend with her grandmother?

A. 64   B. 65
C. 66   D. 67

41. In the figure below line **QRT** is a straight line **QP = QR**, angle **SRT** = 60^0 and angle **PQR** = 50^0.
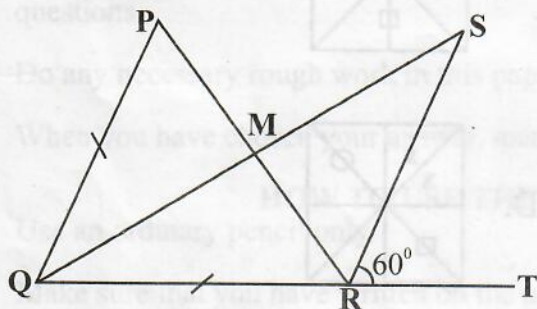
Find the size of angle **PRT**?
A. 120^0 B. 55^0
C. 65^0 D. 115^0

42. What is the sum of the **LCM** and **GCD** of 24, 36 and 56?

A. 1012
B. 504
C. 508
D. 1008

43. Construct triangle **WXY**, where line **WX** = 6 cm, angle **WXY** = 70^0 and angle **XYW** = 50^0. What is the length of line **WY**?

A. 7.4 cm
B. 6.8 cm
C. 5.3 cm
D. 6.2 cm

44. A casual worker earns sh. 210 in 3 hours. How much can 12 workers earn in 9 hours?

A. sh. 7560
B. sh. 5670
C. sh. 22680
D. sh. 2520

45. The figure below shows two semicircles and a right angled triangle.
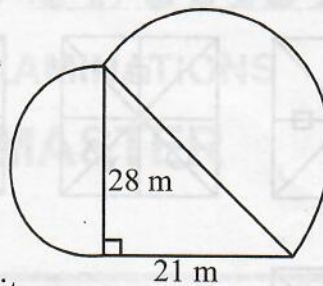
Find its area.
A. 924 m²   B. 1083.25 m²
C. 654.5 m²   D. 1097.25 m²

46. A motorist started his journey from Meru to Nanyuki driving at a speed of 60 km/h. After driving for 2 hours, the car got a puncture that took 30 minutes to repair. He then covered the remaining distance of 210 km at a speed of 70 km/h. What was his average speed for the whole journey?

A. 100 km/hr   B. 65 km/h
C. 60 km/h   D. 130 km/h

47. The mean mass of 5 boys is 34 kg. When a parent and a teacher are added the mean mass becomes 42 kg. If the mass of the parent is 6kg more than that of the teacher. What is the mass of the teacher?

A. 59 kg   B. 65 kg
C. 48 kg   D. 53 kg

48. The table below shows the charges for sending parcels through the post office.

| Weight steps	Comm (sh)
upto 200g	30.00
over 200 g upto 500 g	50.00
over 500g upto 1 kg	80.00
over 1 kg upto 5 kg	120.00
over 5 kg upto 10 kg	180.00
over 10 kg upto 20 kg	250.00
Each additional 1 kg or part there of upto 5 kg	60.00

Mambo sent two parcels weighing $1\frac{1}{2}$ kg and another one of mass 12 kg. He also sent a parcel weighing $22\frac{1}{2}$ kg. How much did she pay?
A. sh. 800.00   B. sh. 890.00
C. sh. 620.00   D. sh. 920.00

49. What is the next shape in the pattern?

A.

B.

C.

D.
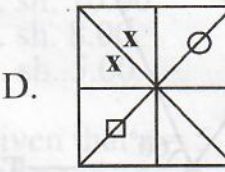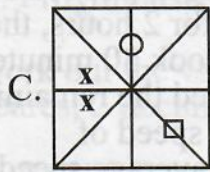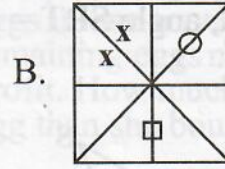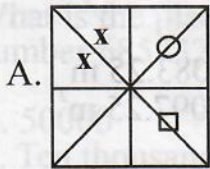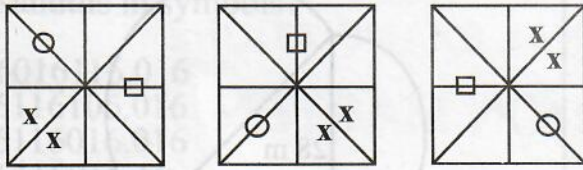
50. The graph below shows the journey of a motorist from town **A** to town **K** and back via town **B** and **C**.
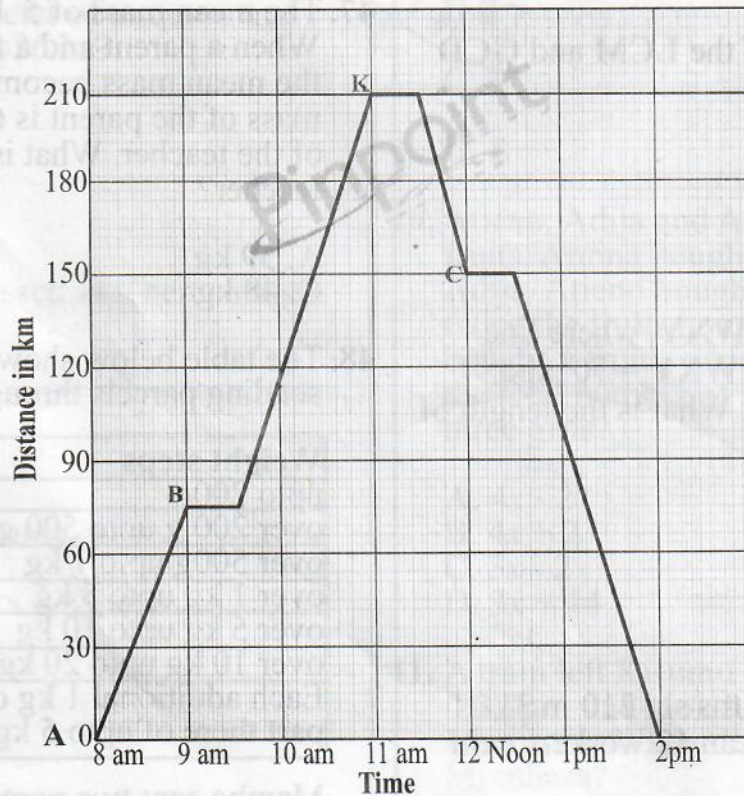
Between which two towns did he travel at the highest speed?
A. **A** and **B**
B. **B** and **K**
C. **K** and **C**
D. **C** and **K**

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