035713655

KENYA NATIONAL PREDICTION TESTS

KCPE

516003

MATHEMATICS

Time: 2 hours

INSTRUCTIONS TO CANDIDATES (Please read these instructions carefully)

1. You have been given this question booklet and a separate answer sheet. The question booklet contains 50 questions.
2. Do any necessary rough work in this booklet.
3. When you have chosen your answer, mark it on the **ANSWER SHEET**, not in this question booklet.

HOW TO USE THE ANSWER SHEET

4. Use only an ordinary pencil.
5. Make sure that you have written on the answer sheet:

   YOUR INDEX NUMBER
   YOUR NAME
   NAME OF YOUR SCHOOL

6. By drawing a **dark line** inside the correct numbered boxes mark your full Index Number (i.e. 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 the sheet as clean as possible and do not fold it.
9. For each of the questions 1-50 four answers are given. The answers are lettered A, B, C and 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.

    35. The following are factors of sixteen. Which one is the odd one out?

    A. 16
    B. 1
    C. 8
    D. 3

    5. [A] [B] [C] [D] 15. [A] [B] [C] [D] 25. [A] [B] [C] [D] 35. [A] [B] [C] [D] 45. [A] [B] [C] [D]

    On the answer sheet:

    In the set of boxes numbered **35**, the box with the letter **D** 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.

This question paper consists of 8 printed pages.

906503

© Mtihani Bora

1. What is thirty six million forty seven thousand five hundred and seventy eight written in symbols?
   A. 36047578
   B. 360047578
   C. 360407578
   D. 364700578

2. Which of the following statements is correct?
   A. $\frac{1}{9}=0.11$
   B. $\frac{1}{9}>0.11$
   C. $\frac{4}{3}=1.33$
   D. $\frac{2}{3}<0.66$

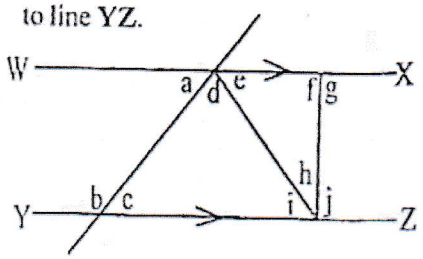
3. A gubernatorioal aspirant donated 6 tonnes of maize to a village. Each family received 2.5kg of maize. How many families benefited?
   A. 240
   B. 24
   C. 2400
   D. 1200

4. What is the difference between the total value of digits 5 and digit 7 in the number 2807549?
   A. 6500
   B. 14
   C. 650
   D. 7000

5. What is the value of;
   $$\frac{6(24-18)+6 \text{ of } 4\div 2\times 3}{3(8\div 2)-3-3}?$$
   A. 6
   B. 4
   C. 18
   D. 12

6. Construct a triangle ABC in which line AB = 7cm, angle BAC = 70° and angle ACB = 75°. Drop a perpendicular from point C to meet line AB at point N. Mark point O on the perpendicular bisector 8cm from point C. Join O to B. What is the measure of angle BON?
   A. 90°
   B. 55°
   C. 35°
   D. 65°

7. In the figure below, line XW is parallel to line YZ.



   Which of the following statements is true about the angles in the figure above?
   A. d = c
   B. c = i
   C. g = i + h
   D. e = h

8. Alice brought some bananas to her 15 classmates. She ate 3 bananas on the way and there after realized that she had to add 5 more bananas so that each of her classmates could get 3 bananas. How many bananas did she have initially?
   A. 45
   B. 72
   C. 48
   D. 43

9. Kinyajui deposited sh. 8000 in a bank that paid simple interest per annum. At the end of $2\frac{1}{2}$ years, he withdrew all his money which had amounted to sh. 9200. At what rate was the interest calculated?

A. 12%

B. 6%

C. $7\frac{1}{2}\%$

D. 10%

10. Mitchell left town C at 8:15am and cycled at a speed of 12km/h for 2 hours. She then rested for 35 minutes before resuming the journey at a speed of 15km/h for 2 hours 20 mins to town B, then travelled back town C. How many kilometres did she cover altogether?

A. 118km

B. 59km

C. 24km

D. 148km

11. Omole planted trees around his square garden whose area is 1296m² at a regular interval of 4m. He left a space of 8m for the gate. How many trees did he plant?

A. 34

B. 144

C. 36

D. 35

12. Halima slept at 7:25pm and woke up at 0915hrs the following day. For how long had she slept?

A. 2hrs 50 min

B. 10hrs 50min

C. 13hrs 50min

D. 12hrs 50min

13. Construct a rhombus **WXYZ** in which line **XY** = 6.5cm and angle **WXY** = 110°. What is the length of line **XZ**?

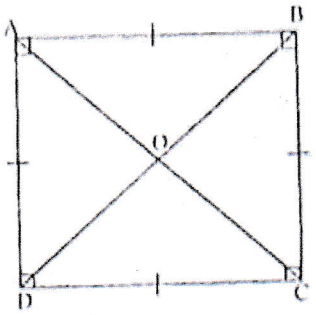
A. 7.5cm

B. 10.5cm

C. 6.4cm

D. 8.6cm

14. Which of the following is **true** about the square below?



A. All the sides of the triangle **AOB** are equal.

B. Angle **BOC** = angle **AOB**.

C. Triangle **DOC** is an isosceles triangle.

D. One of the angles of triangle **AOD** = 60°.

15. Martha sold a dress for sh. 720 making a loss of 10%. How much profit would she have made if she had sold the dress at 20% profit?

A. Sh. 960

B. Sh. 160

C. Sh. 800

D. Sh. 80

16. What is the value of:

$$\frac{2a(b-2)^2}{c+1}$$

when $a = 2b + c$, $b = 5$ and $c = b + 3$?

A. 36

B. 12

C. 18

D. 72

17. In a meeting, $\frac{3}{5}$ of the attendants were men, $\frac{1}{4}$ of the remainder were women and the rest were children. How many children were there if there were 160 women in that meeting?
A. 320
B. 480
C. 240
D. 640

18. What is 25.678 rounded off to the nearest tenths?
A. 25.70
B. 25.7
C. 25.700
D. 26.0

19. What is the value of;

$$\frac{4}{5}\text{of}\left(\frac{2}{3}-\frac{3}{5}\right)+\frac{1}{5}+\left(\frac{3}{4}\times\frac{2}{5}\right)$$

A. $\frac{17}{30}$

B. $\frac{13}{30}$

C. $\frac{7}{10}$

D. $1\frac{3}{10}$

20. A man paid sh. 3800 for a suit after getting a 5% discount on the marked price. How much would he have paid if he had been given a 15% discount?
A. Sh. 3600
B. Sh. 3400
C. Sh. 4000
D. Sh. 3750

21. Pupils in a school contributed money for a tour as follows;
Grade 1 - 3 contributed sh. 250 each.
Grade 4 - 5 contributed sh. 400 each
Class 6 - 8 contributed sh. 650 each.
How much money was contributed altogether if each class in the school was double stream with an everange of 40 pupils per stream?
A. Sh. 130000
B. Sh. 140000
C. Sh. 140000
D. Sh. 280000

22. ***The table below shows matatu fare in shillings from town A to town E.***

A				
160	B			
250	180	C		
350	200	150	D	
450	350	250	100	E

Twelve passengers boarded the matatu at town A. Four of them alighted at town B and six more boarded. Two more passengers boarded the matatu at Town C and all proceeded to town E where they alighted. How much money was collected altogether?
A. Sh. 6840
B. Sh. 7840
C. Sh. 6200
D. Sh. 6340

23. What is the sixth number in the sequence; 6, 13, 24, 37, ____, ____
A. 69
B. 52
C. 54
D. 73

24. What is the value of y in the equation;

$\frac{y}{4}+\frac{2}{3}(y+5)=6$?

A. $10\frac{2}{11}$

B. $2\frac{10}{11}$

C. $3\frac{1}{11}$

D. $2\frac{4}{9}$

25. ***The table below shows the number of pupils who were in standard 5 to 8 in a school from 2018 to 2021.***

	Std 5	Std 6	Std 7	Std 8
2018	83	81	79	77
2019	78	80	76	73
2020	87	82	78	84
2021	80	84	69	75

How many pupils who were in class five in 2018 had dropped out of class by 2021?
A. 8
B. 7
C. 2
D. none

26. The area of the curved surface of a cylinder is 968cm² and its height is 22cm. What is the radius of the cylinder?

A. 14cm
B. 28cm
C. 7cm
D. 3.5cm

27. What is the value of;
1637.44 ÷ 68?

A. 24.8
B. 24.08
C. 2.048
D. 2.408

28. A jua kali artisan made a metallic box whose length was 80cm, height of 50cm and a width of 60cm. He painted the box on the outside all round. What area was painted in square metres?

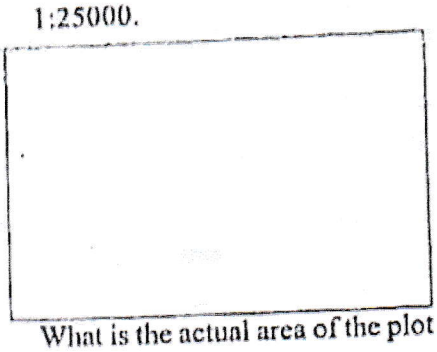
A. 236cm²
B. 23600m²
C. 2.36m²
D 0.0236m²

29. Judy bought the following items from a shop.
- *3 loaves of bread @ sh. 45*
- $1\frac{3}{4}$ *kg sugar at sh. 120*
- *3 - 2 kg packets of rice at sh. 130*
- $1\frac{1}{2}$ *kg meat at sh. 100 per* $\frac{1}{4}$ *kg.*

What balance was she given from 2 one thousand shilling notes?

A. Sh. 335
B. Sh. 565
C. Sh. 665
D. Sh. 465

30. The diagram below shows a scale drawing of a plot of land drawn to scale 1:25000.



What is the actual area of the plot in hectares?

A. 15ha
B. 1.5ha
C. 1500ha
D. 150ha

31. What is the value of;

$$\frac{2.8 - 0.5 \times 3.2 + 3}{0.4}?$$

A. 10.5
B. 42
C. 21.0
D. 0.5

32. A salesman earns a basic salary of sh. 5000. He is also paid a commission of 3% on the value of sales made above sh. 20000. In one month, he sold 1500 items at sh. 240 each. What was his total earning that month?

A. Sh. 10200
B. Sh 15800
C. Sh. 15200
D. Sh. 8200

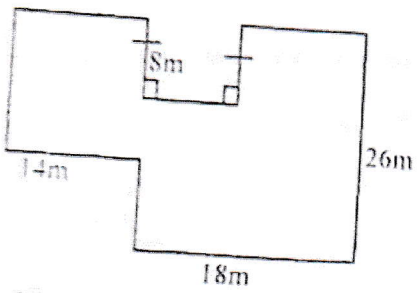
33. A company shared dividends among its three shareholders such that Kipkotut received sh. 10 more than Abdalla, while Kivungi got twice the amount Kipkotut got. If Abdalla received sh. x, which of the following expressions represents the total amount of dividends received by the three?

A. Sh. (5x + 30)
B. Sh. (4x + 30)
C. Sh. (2x + 20)
D. Sh. (3x + 30)

34. The ratio of boys to girls in school is 3:4. If there 180 more girls than boys, how many boys are there in the school?
A. 240
B. 720
C. 540
D. 1260

35. What is the product of the vertices and the edges of a triangular prism?
A. 54
B. 45
C. 270
D. 15

36. What is the total distance round the figure below?



A. 84m
B. 74m
C. 100m
D. 132m

37. What is the difference between the LCM and the GCD of 24, 32 and 40?
A. 480
B. 248
C. 12
D. 472

38. A pick-up carried thirty-50kg bags of rice and twenty-20kg bags of flour. If the empty pick-up weighs 1.8 tonnes, what was the total mass of the loaded pick-up in tonnes?
A. 3.7t
B. 1.9t
C. 3.6t
D. 2.8t

39. Emmy had 240 litres of juice. She packed three quarters of the juice into 500ml bottles and the rest into 300ml bottles. What was the total number of bottles packed?
A. 360
B. 200
C. 300
D. 560

40. A rectangular water tank is 8m long, 6m wide and 6m high. How much water in litres does it hold when it is three-quarter full?
A. 216000L
B. 72000L
C. 288000L
D. 144000L

41. An isosceles triangle has a perimeter of 50cm and each of its equal sides measures 17cm. What is its area ?
A. 240cm^2
B. 120cm^2
C. 136cm^2
D. 67cm^2

42. The marked price of a cooker was sh. 7500. The hire purchase price was 20% more than the marked price. Wambua bought the cooker on hire purchase terms. He paid a deposit of sh.3000 and the balance in monthly installments of sh. 750. In how many months did he pay the balance?
A. 12
B. 8
C. 10
D. 6

43. Eighteen people can take 72 days to dig a trench. If 2 people did not turn up for the work, how many more days would the remaining number of people take to complete the work working at the same rate?

A. 81
B. 53
C. 19
D. 9

44. What is simplified form of the expression;

$\frac{6(x+2y)+3x}{2(x+2y)-2y}$?

A. $\frac{9x+12y}{2x+2y}$

B. $\frac{6x+6y}{2x}$

C. $\frac{9x+2y}{2x}$

D. $\frac{3-3x}{2y}$

45. In the year 2019, the enrollment of a school was 450. In the year 2020, the enrollment decreased by 10% but later increased by 20% in the year 2021. What was the enrollment in 2021?

A. 405
B. 486
C. 540
D. 495

46. What is the value of;

$\sqrt{2\frac{1}{4}+2\frac{7}{9}\times\left(\frac{3}{5}\right)^2}$?

A. $1\frac{1}{5}$

B. $\frac{6}{25}$

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

D. $1\frac{1}{9}$

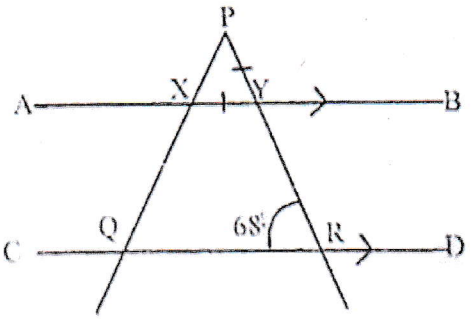
47. John cycled from home to the market at an averange speed of 5m/s for 20 minutes. He went back home cycling at an averange speed of 10m/s. If he left the market at 2.00pm, at what time did he reach home in 24- hour clock system?

A. 0210hrs
B. 1430hrs
C. 0230hrs
D. 1410hrs

48. Muchai went on leave from 16th Jan 2021 and reported back on 19th March the same year. For how many days was he away from work?

A. 60
B. 61
C. 62
D. 63

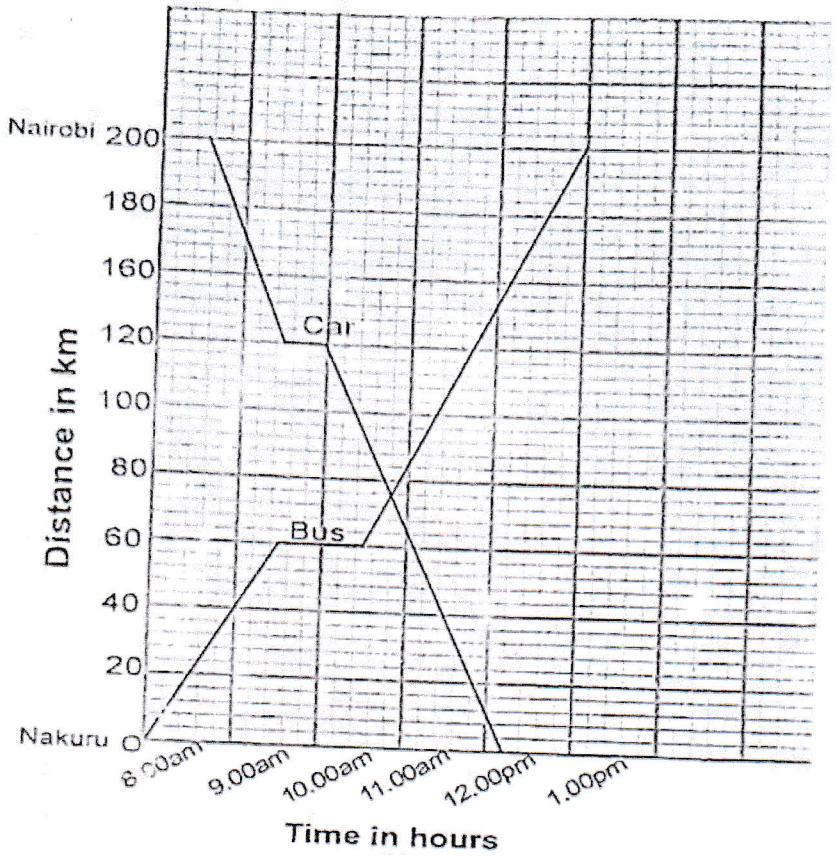
49. In the figure below, line AB is parallel to line CD. Line XY = PY and angle QRP = 68°.



What is the size of angle RQP?

A. 46°
B. 48°
C. 56°
D. 44°

50. *The graph below shows the journey made by a bus and a car.*



How far from Nairobi was the bus when the car arrived in Nakuru?

A. 40km

B. 60km

C. 80km

D. 50km