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STANDARD EIGHT

SIGNAL 002

SIGNAL EXAMS 2020
SECOND K.C.P.E SIGNAL

MATHEMATICS

Time: 2 hours

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 the 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 at 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 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, the correct answer is to be shown by drawing a **dark line** inside the box in which the letter you have chosen is written.

Example:
In the question booklet:

11. What is the perimeter of a rectangle which measures 600m long 250m wide?

A. 170m
B. 850m
C. 1700m
D. 320m

The correct answer is **C (1700m)**

On the answer sheet:

1	A B C D	11	A B ■ D	21	A B C D	31	A B C D	41	A B C D

In the set of boxes numbered 11, the box with the letter **C** 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

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1. What is **3605035** written in words?

   A. Three million six hundred and five thousand and thirty five.

   B. Thirty six million five thousand and thirty five.

   C. Thirty six thousand five hundred and thirty five.

   D. Three million six hundred and fifty thousand and thirty five.

2. What is the value of;

$$\frac{2(4 \times 3)^2 + 2(5 + 1)}{3(2 + 3)}?$$

   A. $558\frac{2}{3}$

   B. 20

   C. $35\frac{2}{5}$

   D. 10

3. What is **587.6986** rounded off to 2 decimal places?

   A. 587.60

   B. 587.69

   C. 587.70

   D. 587.7

4. What is the difference between the LCM and the GCD of 8, 24 and 36?

   A. 68

   B. 32

   C. 76

   D. 18

5. How many groups of thousands are in the total value of digit **3** in the number **4368752**?

   A. 300000

   B. 30

   C. 300

   D. 100

6. Which one of the following digits can fill the gap in the number 25 _51 to make it divisible by 11?

   A. 5

   B. 3

   C. 7

   D. 6

7. What is the square root of $3\frac{1}{16}$?

   A. $1\frac{3}{4}$

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

   C. $3\frac{4}{7}$

   D. $\frac{7}{16}$

8. Derick had 150 chicken in the year 2008. In the year 2009 the number of chicken increases to 180. What was the percentage increase in the number of the chicken?

   A. 120%

   B. 20%

   C. 80%

   D. 60%

9. A rectangular plot of land whose length is 54m has the same area as a square plot of land whose side measures 36m. What is the width of the rectangular plot?

A. 18m

B. 48m

C. 90m

D. 24m

10. Three bells were set to ring at intervals of 15min, 24min and 1 hour respectively. If they rang together at 11:42am, at what time did they ring together again?

A. 1:42pm

B. 1:42am

C. 1:44am

D. 9:42pm

11. Maurice's stride is 0.25 metres. How many strides will he make to cover 0.25km?

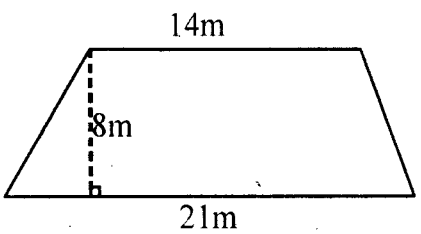
A. 10000

B. 1000

C. 100

D. 10

12. Find the area of the figure below.



A. $175m^2$

B. $1176m^2$

C. $53m^2$

D. $140m^2$

13. Arrange the following fractions in descending order.

$\frac{4}{5}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}$

A. $\frac{2}{3}, \frac{3}{4}, \frac{4}{5}, \frac{5}{6}$

B. $\frac{5}{6}, \frac{3}{4}, \frac{4}{5}, \frac{2}{3}$

C. $\frac{5}{6}, \frac{4}{5}, \frac{3}{4}, \frac{2}{3}$

D. $\frac{2}{3}, \frac{4}{5}, \frac{3}{4}, \frac{5}{6}$

14. Kombo bought a bull for sh. 28000 and later sold it for sh. 26600.

What percentage loss did he make?

A. 140%

B. 5%

C. 95%

D. 105%

15. What is the value of :

174344 ÷ 124 ?

A. 1460

B. 14006

C. 1406

D. 1046

16. The radius of a bicycle wheel is 35cm. How many revolutions will it make to cover a distance of 8.8km?

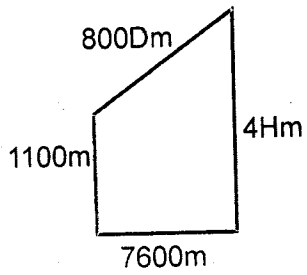
A. 220

B. 40

C. 400

D. 4000

17. Calculate the distance round the figure shown below in kilometers.



A. 17.1km
B. 157.1km
C. 16.4km
D. 15.11km

18. What is the value of;

$6\frac{3}{5} \div 3\frac{2}{3} \times 1\frac{7}{18}$?

A. $3\frac{1}{12}$
B. $1\frac{2}{7}$
C. $2\frac{1}{2}$
D. $\frac{7}{30}$

19. If $a = 3, b = 5, c = (b - a)^2$ and $d = ac$, find the value of;

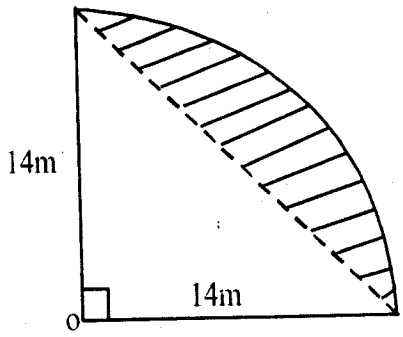
$2(d - b) + (c - a)^2$

A. 12
B. 15
C. 23
D. 13

20. Owembi and Matayo shared sh. 26000 from their business in the ratio 7:6. How much more did Owembi get than Matayo?

A. Sh. 14000
B. Sh. 12000
C. Sh. 16000
D. Sh.2000

21. The figure below represents a quarter of a circle with centre **0**. What is the area of the shaded part?



A. $14cm^2$
B. $28cm^2$
C. $56cm^2$
D. $54cm^2$

22. What is the next number in the pattern below?

3, 7, 16, 32, 57, ____

A. 63
B. 93
C. 106
D. 75

23. Wanjala paid sh.3200 for a bag of maize after getting a discount of 20%. What was the marked price of the bag of maize?

A. Sh. 4000
B. Sh. 3800
C. Sh. 3640
D. Sh. 3840

24. What is $1\frac{1}{4}\%$ expressed as a ratio in its simplest form?

A. 1:4

B. 5:4

C. 1:80

D. 1:40

25. Njoroge is **p** years old now. He is **q** years older than his wife. Write an expression to show the sum of their ages in 5 years time.

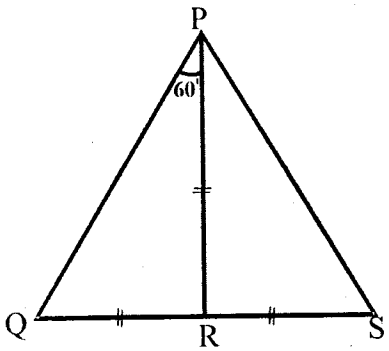
A. 2p - q + 10

B. 2p - 2q + 5

C. p + q + 5

D. p + q + 10

26. In the figure below, **QRS** is a straight line. Line **PR = QR = RS**. Angle **QPR** = 60^0. What is the size of angle **PSR**?



A. 60^0

B. 55^0

C. 45^0

D. 30^0

27. The area of a right-angled triangle is $330cm^2$. The length of the shortest side is 11cm. What is the length of the longest side?

A. 30cm

B. 61cm

C. 11cm

D. 60cm

28. Mwangangi deposited sh. 30000 in a bank that paid simple interest at the rate of 8% p.a. What was the total amount of money in the bank at the end of 3 years?

A. Sh. 34800

B. Sh. 7200

C. Sh. 37200

D. Sh. 4800

29. What is the total surface area of a closed cylindrical tank of height 35cm and a diameter of 28cm?

A. $3080cm^2$

B. $1232cm^2$

C. $3520cm^2$

D. $4312cm^2$

30. A car crosses a bridge 200 metres long in 5 seconds. What is its speed in km/hr?

A. 30km/h

B. 144km/h

C. 40km/hr

D. $11\frac{1}{9}$ km/h

31. A saleslady earns a commission of 7% on all the sales she makes. During the month of December, she sold goods worth sh. 450000. How much commission was she paid?

A. Sh. 418500

B. Sh. 481500

C. Sh. 39120

D. Sh. 31500

32. In a hotel, 9 people were hired to complete a piece of work in 15 hours. How many more hours did it take them to complete the work if 3 people did not turn up?

A. $7\frac{1}{2}$ hours

B. 30 hours

C. $22\frac{1}{2}$ hours

D. 5 hours

33. A circular plot was fenced using two equal strands of wire whose total length was 880m. What was the radius of the plot?
(Take $\pi = \frac{22}{7}$)

A. 210m

B. 35m

C. 140m

D. 70m

34. In a milk processing factory, ten -7 litre containers were processed. It was later re- packed into 5 -decilitre bottles. How many such bottles were obtained?

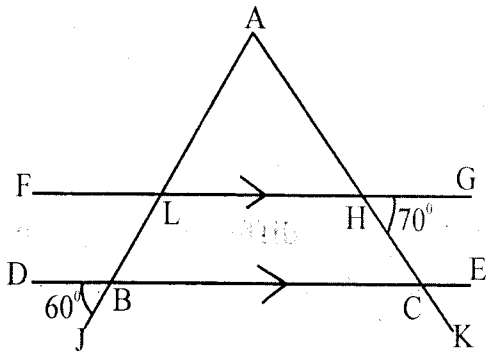
A. 1400

B. 140

C. 14

D. 70

35. In the figure below, line **DE** is parallel to line **FG**, angle **CHG** = 70^0 and angle **DBJ** = 60^0. What is the size of angle **BAC**?



A. 40^0

B. 50^0

C. 60^0

D. 110^0

36. Halima bought the following items from a shop.

- *A 2kg packet of sugar for sh. 160*
- *2kg of cooking fat for sh.85per kg*
- *3kg of beans @ sh. 65*
- $\frac{1}{2}$ *kg packet of tea leaves for sh. 120*

What balance did she receive if she paid for the items using a sh. 1000 note?

A. Sh. 175

B. Sh. 825

C. Sh. 645

D. Sh. 355

37. Construct triangle **XYZ** where line **XY** = **XZ** = 6cm and **YZ** = 7cm. Construct a circle passing through the vertices of the triangle. What is the radius of the circle?

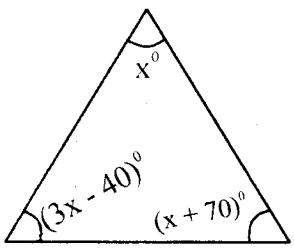
A. 7.5cm

B. 3.7cm

C. 6.0cm

D. 1.8cm

38. What is the difference between the largest and the smallest angles in the figure below?



A. 30^0

B. 50^0

C. 70^0

D. 100^0

39. The following are properties of quadrilaterals.

(i) All sides are equal.

(ii) Some angels are equal.

(iii) Diagonals are equal.

(iv) Has a pair of parallel lines.

(v) Diagonals bisect each other at right angles.

(vi) Opposite sides are equal and parallel.

Which two properties are for squares and rhombuses?

A. (i) and (vi)

B. (v) and (vi)

C. (i) and (iv)

D. (ii) and (i)

40. What is the value of **x** in the equation below?

$$\frac{2x+3x-5}{3}=5$$

A. $5\frac{1}{24}$

B. $1\frac{4}{5}$

C. 9

D. 4

41. A river measuring 6cm long on a map has an actual length of 24km. What is the scale used?

A. 1: 400000

B. 1:4000000

C. 1:400

D. 1:4000

42. Use the correct inequality sign to complete the statement below.

15% of 500 _____ $\frac{1}{2}$ of 300

A. >

B. <

C. =

D. ≥

43. What is the shortest length of wire that can be cut into pieces measuring 9cm, or 15cm or 20cm without a remainder?

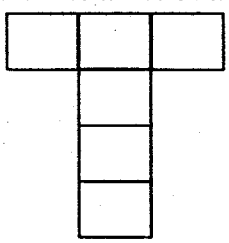
A. 90cm

B. 180cm

C. 360cm

D. 720cm

44. Below is a net of a solid.



Which of the following solids can be formed when the net above is folded?

A. Rectangular pyramid

B. Rectangular prism

C. Square pyramid

D. Square prism.

45. What is the value of: $\sqrt{17.64}$?

A. 4.2

B. 0.42

C. 0.48

D. 4.8

46. What is the value of;

$$\frac{1.33 \times 5.1}{0.19 \times 0.0017}?$$

A. 0.21

B. 21000

C. 2.1

D. 210

47. What is the value of;

$9(2x + 2y) - 4(2x + y)$?

A. $10x + 22y$

B. $26x + 22y$

C. $10x + 14y$

D. $22x + 26y$

48. The table below shows fare in shillings between different towns.

J					
100	K				
120	80	L			
150	110	90	M		
180	150	120	60	N	
200	170	150	100	80	O

Aswan went from town **J** direct to town **O**. How much more money did he pay if he went back to town **J** via town **M**?

A. Sh. 50

B. Sh. 250

C. Sh. 80

D. Sh. 450

49. A rectangular container measures 50cm by 60cm by 80cm. How much water in decilitres does it hold when half full?

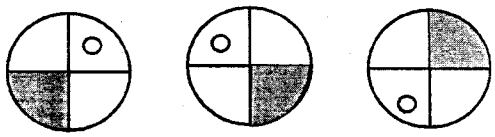
A. 120 dl

B. 1200dl

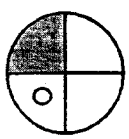
C. 2400dl

D. 12000dl

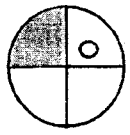
50. What is the next shape in the pattern below?



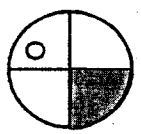
A.



B.



C.



D.