0570/1/2022
MATH O/L

SOUTH WEST REGIONAL MOCK EXAMINATION
GENERAL EDUCATION

The Teachers' Resource Unit (TRU) in collaboration with the Regional Inspectorate of Pedagogy for Science Education and the South West Association of Mathematics Teachers (SWAMT)	Subject Code 0570	Paper Number 1
CANDIDATE NAME ..... CANDIDATE NUMBER ..... CENTRE NUMBER	Subject Title: MATHEMATICS	
ORDINARY LEVEL	DATE:- TUESDAY Afternoon; 05/04/2022	

Time Allowed: One hour thirty minutes

INSTRUCTIONS TO CANDIDATES:

1. USE A SOFT HB PENCIL THROUGHOUT THIS EXAMINATION.
2. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Before the Examination begins:

3. Check that this question booklet is headed **"Ordinary Level – 0570 Mathematics, Paper 1".**
4. Fill in the information required in the spaces provided above.
5. Insert the information required in the spaces provided on the answer sheet using your HB pencil:

Candidate Name, Centre Number, Candidate Number, Subject Code Number and Paper Number.

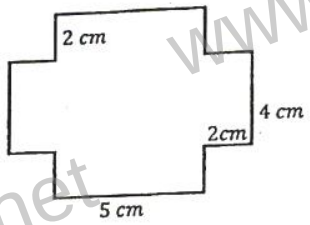
How to answer questions in this examination:

6. Answer ALL the 50 questions in this examination. All questions carry equal marks.
7. **Non-programmable calculators are allowed.**
8. For each question there are four suggested answers, A, B, C, and D. Decide which answers is correct. Find the number of the question on the Answer sheet and draw a horizontal line across the letter to join the square brackets for the answer you have chosen. For example, if C is your correct answer, mark C as shown below:

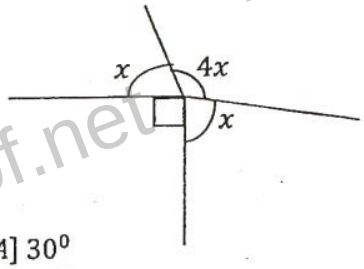
[A] [B] [C] [D]

9. Mark only one answer for each question. If you mark more than one answer, you will score zero for that question. If you change your mind about an answer, erase the first mark carefully, and then mark your new answer.
10. Avoid spending much time on any question. If you find a question difficult, move to the next question. You can come back to this question later.
11. Do all rough work in this booklet using, where necessary, the blank spaces in the question booklet.
12. Mobile phones are **NOT ALLOWED** in the examination room.
13. **You must not take this booklet and answer sheet out of the examination room. All question booklets and answer sheets will be collected at the end of the examination**

1. Evaluating $2 \times (8 + 4) - 7$ gives
   [A] 10
   [B] 17
   [C] 13
   [D] 7
2. The HCF OF 54 and 96 is
   [A] 6
   [B] 4
   [C] 27
   [D]8
3. The number 40.510 to the nearest whole number is
   [A] 40
   [B] 41
   [C] 6.53×10^4
   [D] 6.53×10^3
4. The number whose standard form is 4.6×10^{-5} is
   [A] 0.00046
   [B] 460000
   [C] 0.000046
   [D] 4600000
5. The number 50.032 to three significant figures is
   [A] 50.00
   [B] 50.032
   [C] 50.03
   [D] 50.0
6. Given that $x : 3 = 12 : x$, then the value of x is
   [A] 6
   [B] 4
   [C] 36
   [D] 18
7. The scale on a map is 1 : 20,000. The actual length, in km represented on the map by 10 cm is
   [A] 200000km
   [B] 2 km
   [C] 20 km
   [D] 200 km
8. A student scored 24 out of 30 in a test. The score on 20 is
   [A] 12
   [B] 14
   [C] 10
   [D] 16
9. Evaluating $17 - 3y$ when $y = 2$ gives
   [A] 11
   [B] 15
   [C] 14
   [D] 23
10. The expression $5x - 2(x - 1)$ simplifies to
    [A] $3x - 2$
    [B] $6x - 3$
    [C] $3x + 2$
    [D] $6x + 3$
11. The perimeter of the figure below is



    [A] 13 cm
    [B] 20 cm
    [C] 34 cm
    [D] 22 cm
12. The value of $x$in the diagram below is



    [A] 30^0
    [B] 45^0
    [C] 60^0
    [D] 105^0
13. Given the conditional statement $p \Longrightarrow q$, the converse is
    [A] $p \Longrightarrow q$
    [B] $\sim q \Longrightarrow \sim p$
    [C] $\sim p \Longrightarrow \sim q$
    [D] $q \Longrightarrow p$
14. The column x in the truth table below represents

p	q	x
T	T	T

[D] $\begin{pmatrix} 2 & -1 \\ 2 & 4 \end{pmatrix}$

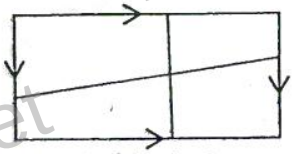
24. The coordinates of the point where the line $2x + y = 5$ meets the line $y = 1$ are
[A] $(2, 5)$
[B] $(2, 1)$
[C] $(1, 2)$
[D] $(5, 1)$

25. The gradient of the line joining the points $(1, 1)$ and $(3, 5)$ is
[A] $\frac{1}{2}$
[B] $-\frac{1}{2}$
[C] -2
[D] 2

26. The 4^{th} term of a Geometric Progression with 1^{st} term 32 and common ratio $\frac{1}{2}$ is
[A] 8
[B] 16
[C] 2
[D] 4

27. The expression $(4x)^{\frac{1}{2}} \div x^{\frac{3}{2}}$ simplifies to
[A] $\frac{4}{x}$
[B] $2x^3$
[C] $\frac{2}{x}$
[D] $4x^{\frac{3}{4}}$

28.



The number of nodes in the network above is
[A] 4
[B] 9
[C] 12
[D] 13

29. Given that $tan\theta = \frac{3}{4}$, then $sin\theta =$
[A] $\frac{3}{4}$
[B] $\frac{4}{5}$
[C] $\frac{3}{5}$
[D] $\frac{5}{4}$

30. The value of y which satisfies the simultaneous equations $x + 2y = 6$ and $x + y = 2$ is
[A] 4
[B] 3
[C] 2
[D] 8

31. Which of the following is a free vector?
[A] $\overrightarrow{OA}$
[B] $\overrightarrow{AB}$
[C] BO
[D] $\overline{BA}$

32. The factors of the expression $t^2 - 2t - 15$ are
[A] $(t - 5)(t - 3)$
[B] $(t - 5)(t + 3)$
[C] $(t + 5)(t + 3)$
[D] $(t + 5)(t - 3)$

33. Which of the following is a concave polygon?

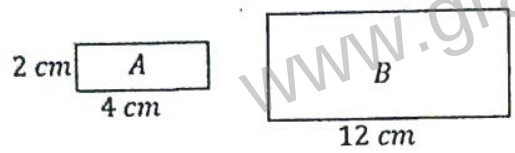
[A] D
[B] B
[C] C
[D] A

34.

T	F	F
F	T	F
F	F	F

[A] $p \wedge q$
[B] $p \vee q$
[C] $p \vee \sim q$
[D] $p \wedge \sim q$

15. Given that the two figures below are similar



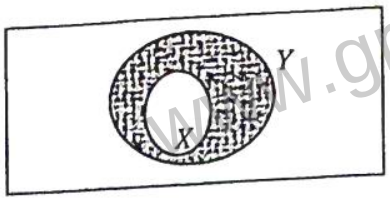
The width of figure B is
[A] 4 cm
[B] 6 cm
[C] 8 cm
[D] 10 cm

16. Given that $\frac{A}{m} + X = Y$, then $m =$
[A] $\frac{Y-X}{A}$
[B] $\frac{A}{Y-X}$
[C] $A(Y - X)$
[D] $mY - AX$

17. When 7 is added to three times a certain number the result is 28. The number is
[A] 21
[B] 35
[C] 7
[D] 4

18. The equation of the line which passes through the point $(2, 4)$ and has gradient $-\frac{1}{2}$ is
[A] $2y + x = 6$
[B] $2x + y = -6$
[C] $2y + x - 10$
[D] $2y + x = -10$

19.



The shaded region in the diagram above is
[A] $X' \cup Y$
[B] $X \cap Y'$
[C] $X' \cap Y$
[D] $X \cap Y$

20. Given the vector $r = 2i - 4j$, then $|r| =$
[A] $\sqrt{20}$
[B] 2
[C] $\sqrt{6}$
[D] 12

21.

The inequality represented by the number line above is
[A] $x < 3,\ x \geq 9$
[B] $3 \leq x \leq 9$
[C] $3 < x \leq 9$
[D] $x \leq 3,\ x > 9$

22. Given that $f: x \to x + 1$, $f^{-1}(3) =$
[A] $\frac{1}{3}$
[B] $\frac{1}{4}$
[C] 4
[D] 2

23. The adjoint of the matrix $\begin{pmatrix} 2 & 1 \\ -2 & 4 \end{pmatrix}$ is
[A] $\begin{pmatrix} 4 & -1 \\ 2 & 2 \end{pmatrix}$
[B] $\begin{pmatrix} 4 & -2 \\ 1 & 2 \end{pmatrix}$
[C] $\begin{pmatrix} 2 & 2 \\ -1 & 4 \end{pmatrix}$

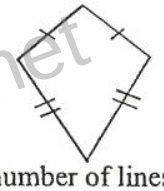
The shaded region in the diagram above is called

[A] *cone*
[B] *triangle*
[C] *segment*
[D] *sector*

35. The locus of a point equidistant from a point M is

[A] circle
[B] parallel line
[C] angle bisector
[D] perpendicular bisector

36.



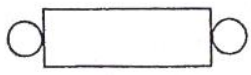
The number of lines of symmetry of the figure above is

[A] 4
[B] 2
[C] 1
[D] 3

37. Which of the following is a tesssellate?

[A] a regular octagon
[B] a regular pentagon
[C] a kite
[D] a rectangle

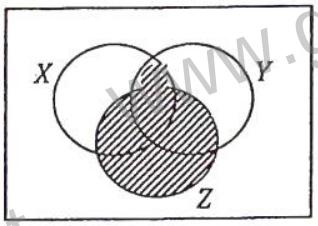
38.



The diagram above is the net of

[A] a square
[B] a cylinder
[C] a rectangle
[D] a circle

39.



The shaded area in the diagram above is represented by

[A] $X \cup Y \cup Z'$
[B] $X \cap Y \cap Z'$
[C] $(X \cap Y) \cup Z$
[D] $(X \cup Y) \cap Z$

40. The value of x which must be excluded from the domain of the function $f : x \rightarrow \frac{3x-1}{2x+4}$ is

[A] $\frac{1}{3}$
[B] -2
[C] $\frac{3}{2}$
[D] -4

41. The bearing of X from Y is 130^0. The bearing from Y to X is

[A] 060^0
[B] 230^0
[C] 310^0
[D] 050^0

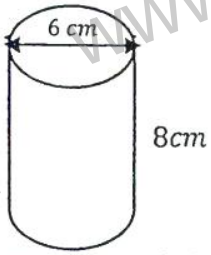
42. Which of the lines below is parallel to the line $y = 2x - 3$?

[A] $2x + y + 7 = 0$
[B] $3y = 3 + 2x$
[C] $2x + 6 = 3y$
[D] $2x - y = 2$

43. The length of the arc which subtends an angle of 30^0 at the center of a circle radius 10 cm is

[A] $\frac{10\pi}{9}$ cm
[B] $\frac{5\pi}{3}$ cm
[C] $\frac{5\pi}{6}$ cm
[D] $\frac{\pi}{3} cm$

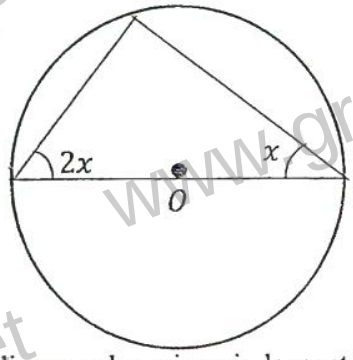
44.



The volume of the cylinder above with diameter 6 cm and height 8 cm is

[A] $48\pi\ cm^3$
[B] $96\pi\ cm^3$
[C] $24\pi\ cm^3$
[D] $72\pi\ cm^3$

45.



The diagram above is a circle, center O. the value of x is

[A] 60^0
[B] 30^0
[C] 90^0
[D] 45^0

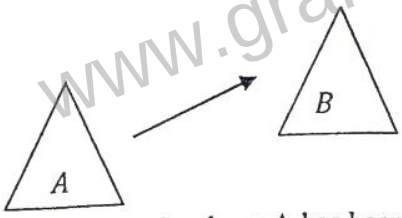
46.

Marks	2	4	8
No. of students	2	3	2

In the table above the average mark is

[A] 2.3
[B] 4.6
[C] 3.5
[D] 11.5

47.



In the diagram above the shape A has been transformed into shape B by a

[A] *shear*
[B] *rotation*
[C] *translation*
[D] *reflection*

48. The mode and median respectively of the set of numbers 12, 8, 3, 9, 11, 3, 5, 7, 8, 12, 8 are

[A] 12, 8
[B] 3, 9
[C] 12, 3
[D] 8, 8

49. Given that a fair die is tossed, the probability of obtaining an even number is

[A] $\frac{1}{2}$
[B] $\frac{1}{6}$
[C] $\frac{2}{3}$
[D] $\frac{3}{5}$

50. The probability that it will rain on a certain day is $\frac{3}{10}$. The probability that it will not rain on that day is

[A] $\frac{3}{10}$
[B] $\frac{7}{10}$
[C] $\frac{3}{5}$
[D] $\frac{2}{5}$

END

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