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LITTORAL MATHEMATICS TEACHERS ASSOCIATION

GENERAL CERTIFICATE OF EDUCATION REGIONAL MOCK EXAMINATION

0570 Mathematics 1

MARCH 2020

ORDINARY LEVEL

CENTRE NO & NAME	
Candidate No	
Candidate Name	

0570 MATHEMATICS 1: MULTIPLE CHOICE QUESTIONS PAPER

One and a half hours

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you start answering the questions in this paper. Make sure you have a soft HB pencil and an eraser for this examination.

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

Before the examination begins:

3. Check that this question booklet is headed "Ordinary Level-0570 Mathematics 1"
4. Insert the information required in the spaces above
5. Insert the information required in the provided on the answer sheet using your HB pencil:
Candidate Name, Exam Session, Subject Code, Centre Number and Candidate Number, Take care that you do not crease or fold the answer sheet or make any mark on it other than those asked for in these instructions.

How to answer questions in the examination:

6. Answer **ALL** the 50 questions. All questions carry equal marks.
7. Calculators are not allowed.
8. Each question has **FOUR** suggested answers: A, B, C and D. Decide on which answer is correct. Find the number of the question on the answer sheet and draw horizontal line across the letter to join the square bracket to the answer you have chosen.

For example, if C is your correct answer, mark C as shown here.

[A] [B] [☒ C] [D]

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9. Mark only one answer for each question. If you mark more than one answer you will score a zero for that question. If you change your mind about an answer, erase the first mark carefully then mark your new answer.
10. Avoid spending too much time on any one question. If you find a question difficult, move on 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 out of the examination room. All question booklets and answer sheets will be collected at the end of the examination**

0570/1/LIT-RG/MOCK

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1. In the problem $\frac{313}{4}$, 313 is called [A] the:Divisor [B] Product [C] Quotient [D] Dividend	9. The number of prime numbers in the interval $2 \leq n \leq 11$ is [A] 6 [B] 3 [C] 5 [D] 4
2. Give the place name of 3 in 2435 [A] tenths [B] tens [C] Units [D] thirty(30)	10. Sarah bought a TV set and resold it for 150,000frs making a profit of 20%. Find the cost price [A] 31,200FCFA [B] 30,000FCFA [C] 125, 000FCFA [D] 187,200FCFA
3. The value of the digit 2 in the number 1.025 is [A] 20 [B] 1.02 [C] 0.02 [D] 2	11. Two sets P and Q are defined as $P = \{\text{multiples of 3}\}$ and $Q = \{\text{multiples of 6}\}$. Identify the correct statement. [A] $P \subset Q$ [B] $P = Q$ [C] $P \cap Q = Q$ [D] $P \cup Q = Q$
4. The time 21:05hrs can be expressed on an analogue clock face as: [A] 21:05AM [B] 21:05PM [C] 9:05PM [D] 9:05AM	12. Peter asked James "How many kids have you?" James answered "My wife delivered such that there is alternation of sex, there is a boy between two girls and a girl between two boys." James has [A] 3 kids [B] 6kids [C] 8 kids [D] 4 kids
5. 240,000FCFA is shared in the ratio 2:3:7. The largest share, in FCFA, is: [A] 168,000 [B] 40,000 [C] 140,000 [D] 120,000	13. Given the statements: p : All principal are attending a meeting q : John is a principal [A] John is attending a meeting [B] The meeting is attended by John [C] John is in the meeting [D] John is a principal attending a meeting
6. A worker's monthly salary increases from 92,000FCFA to 115,000FCFA. The percentage increase is [A] A 20% [B] B 30% [C] C 25% [D] D 15%	14. Written as a single fraction $\frac{5}{6r} - \frac{3}{4r}$ is equal to: [A] $\frac{r}{12}$ [B] $\frac{1}{12r}$ [C] $\frac{12}{r}$ [D] $\frac{r}{6}$
7. Water at -7°C is allowed to attain room temperature of 23°C . The rise in temperature is [A] -30°C [B] -16°C [C] 16°C [D] 30°C	
8. 0.0596 expressed correct to three decimal places is [A] 0.0596 [B] 0.060 [C] 0.059 [D] 0.596	

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15. The function f defined on $\mathbb{Z}$, the set of integers as $f: x \rightarrow 3-x$, then the image of 4 is

- [A] -7
- [B] 1
- [C] 7
- [D] -1

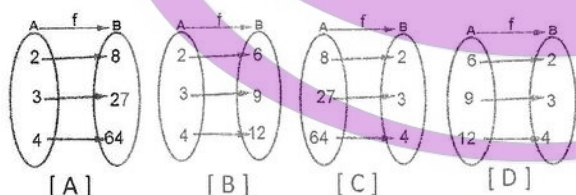
16. In the geometric progression, $\frac{1}{2}, y, \frac{8}{9}, \dots$ the value of y is

- [A] $\frac{3}{2}$
- [B] $\frac{3}{4}$
- [C] $\frac{3}{8}$
- [D] $\frac{2}{3}$

17. The function of f is such that $f(x) = \frac{4x-1}{2x+1}$ the domain set of f should be;

- [A] $x \in \mathbb{R} / x \neq \frac{1}{2}$
- [B] $x \in \mathbb{R} / x \neq \frac{1}{4}$
- [C] $x \in \mathbb{R} / x \neq -\frac{1}{2}$
- [D] $x \in \mathbb{R} / x \neq -\frac{1}{4}$

18. Which of the Pappy diagrams below represent the relation "Is the cube root of"



19. A function $h: x \rightarrow \frac{3x-5}{7}$, where $x \in \mathbb{R}$. The inverse,

$h^{-1}(x)$ is

- [A] $\frac{7x-5}{3}$
- [B] $\frac{7x+5}{3}$
- [C] $\frac{7x-3}{5}$
- [D] $\frac{3x+5}{7}$



20. Given that $p = \frac{m+n}{m}$, express m in terms of p and n .

- [A] $\frac{p-1}{n}$
- [B] $\frac{n}{p+1}$
- [C] $\frac{n}{p^2-1}$
- [D] $\frac{n}{p-1}$

21. The value of $\left(\frac{1}{27}\right)^{-\frac{1}{3}}$ is

- [A] $\frac{1}{3}$
- [B] -3
- [C] 3
- [D] 9

22. The smallest whole number that satisfies the inequality $3x+1 > 7-x$ is

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

23. Given that $(5x-3)(x+2) \equiv 5x^2 - kx - 6$, then the value of k is

- [A] 10
- [B] -3
- [C] -7
- [D] 7

24. The value of $2x^3 - y^3$, given that $x=2$ and $y=-3$ is

- [A] 6
- [B] 7
- [C] 25
- [D] 41

25. Given that y varies directly as x and $y=16$, when $x=2$, the relationship between x and y is

- [A] $y=8x$
- [B] $x=8y$
- [C] $y=32x$
- [D] $xy=32$

26. How many terms are in the expression $2t + 3x - y + 3x - 2t$

- [A] 5
- [B] 2
- [C] 1
- [D] $6x - y$

27. The expression $\frac{1}{x-1} - \frac{3}{1-x}$ is equal to

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

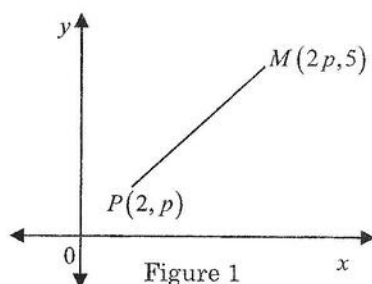
28. $81a^2 - 16b^2$ factorised is equal to:

- [A] $(3a-4b)(3a+4b)$
- [B] $(9a+16b)(9a-16b)$
- [C] $(9a+4b)^2$
- [D] $(9a+4b)(9a-4b)$

29. Given a network with 5 nodes and 4 regions, the number of arcs is:

- [A] 8
- [B] 7
- [C] 6
- [D] 5

30. From the diagram in figure 1 below, if the gradient of the line PM is $\frac{1}{2}$ then the value of p is:



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



31. The x -coordinate of the point of intersection of the line $3x - y - 5 = 0$ and $5x + y - 11 = 0$ is

- [A] 2
- [B] 3
- [C] 8
- [D] $\frac{3}{4}$

32. The area under a velocity-time graph gives

- [A] acceleration
- [B] velocity
- [C] speed
- [D] distance

33. A lorry covers a distance of 120km in $2\frac{1}{4}$ hours, its average speed in m/s is

- [A] 40
- [B] 14.81
- [C] 14
- [D] 240

34.

Figure 2

In figure 2 above, $PQ = 20cm$ and $PS = 14cm$. Taking $\pi = \frac{22}{7}$ and given that the arc QR is a semi-circle. The perimeter is

- [A] 90cm
- [B] 88cm
- [C] 98cm
- [D] 100cm

35. A triangle of sides 10cm, 24cm, and 26cm has the same perimeter as a square. The area of the square is

- [A] $60m^2$
- [B] $100cm^2$
- [C] $225cm^2$
- [D] $576cm^2$

36. The angles of a triangle are in the ratio 1:2:2. The triangle must be:

- [A] Isosceles
- [B] Equilateral
- [C] Obtuse-Angled triangle
- [D] a right-angled triangle

37.

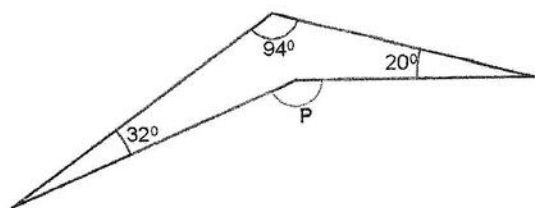


Figure 3

In figure 3 above the angle marked p has a value of

- [A] 94°
- [B] 126°
- [C] 144°
- [D] 146°

38.

The line which cuts through a set of parallel lines is called a

- [A] parallel line
- [B] tangent
- [C] secant
- [D] transversal

39.

A regular polygon has an interior angle measuring 108° . The name of the regular polygon is a

- [A] Quadrilateral
- [B] Heptagon
- [C] Pentagon
- [D] Hexagon

40.

The point P is on a bearing of 060° from the point Q. Then the bearing of the point Q from the point P is

- [A] 060°
- [B] 120°
- [C] 240°
- [D] 300°

41.

In figure 5, O is the centre of the circle, the value of x is:

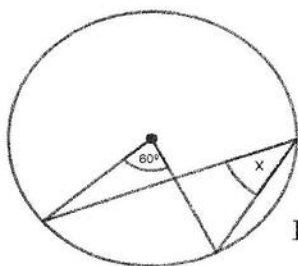


Figure 4

- [A] 30°
- [B] 60°
- [C] 40°
- [D] 80°

42.

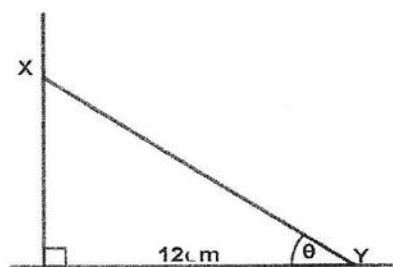


Figure 5

Figure 5 shows a ladder XY leaning against a vertical wall. Given that the foot of the ladder is 12m from the wall and $\cos \theta = \frac{3}{5}$, then the length of the ladder, in metres, is

- [A] 20
- [B] 15
- [C] 12
- [D] 7.2

43.

Figure 6 shows a triangle OBA. Given that $OA = a$, $OB = b$ and $AM : MB = 2 : 1$

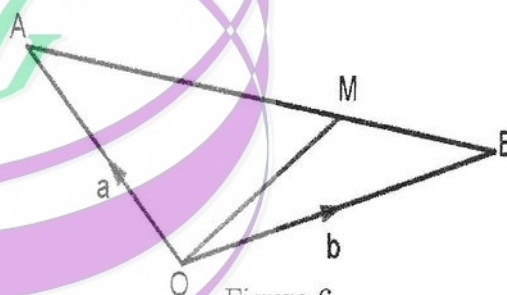


Figure 6

Find in terms of a and b, the vector OM

- [A] $a + 2b$
- [B] $\frac{1}{3}(a + 2b)$
- [C] $\frac{1}{3}(5a + 2b)$
- [D] $\frac{1}{3}$

44. Given the vectors $u = 4i + 3j$ and $v = -i + j$. Then the modulus of $u + v$ is

- [A] 25
- [B] $\sqrt{29}$
- [C] $\sqrt{41}$
- [D] 5

45. Given that $P = \begin{pmatrix} 3 & 2 \\ 1 & 4 \end{pmatrix}$ and $Q = \begin{pmatrix} -3 & -5 \\ 4 & 1 \end{pmatrix}$,

then $2P - Q$ is:

[A] $\begin{pmatrix} 6 & 4 \\ 2 & 8 \end{pmatrix}$

[B] $\begin{pmatrix} 9 & 9 \\ -2 & 7 \end{pmatrix}$

[C] $\begin{pmatrix} 3 & -1 \\ -2 & 7 \end{pmatrix}$

[D] $\begin{pmatrix} 6 & 7 \\ -3 & -3 \end{pmatrix}$

46. The matrix $R = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 3 & 0 \\ 0 & 0 & 7 \end{pmatrix}$ is a

[A] 3×3 diagonal matrix.

[B] 3×3 unit matrix

[C] 3×3 null matrix

[D] 3×3 identity matrix

47.

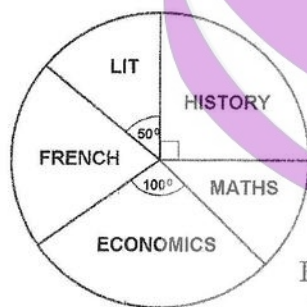


Figure 7

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Figure 7 above is a pie chart indicating the favorite subjects of 120 students in a certain class. Given that twice as many students like Mathematics as French, the angle of the sector for Mathematics is

[A] 40°

[B] 80°

[C] 50°

[D] 30°

48. The average age of 5 doctors is 20 years. If Dr Tim goes on voluntary retirement, the average age of the remaining doctors will be 18 years. How old is Dr. Tim?

[A] 72

[B] 10

[C] 28

[D] 18

49. The probability that a team will win a certain football match is 0.21 and the probability that the team will lose the match is 0.37. Then the probability that the team will draw the match is.

[A] 0.42

[B] 0.60

[C] 0.79

[D] 0.22

50. A fair coin is tossed 5 times. What is the probability of obtaining 5 heads.

[A] $\frac{1}{32}$

[B] $\frac{1}{5}$

[C] $\frac{11}{32}$

[D] 1

END!

Alpha Study Group

