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MARCH 2022

<b>The Teachers' Resource Unit and the Regional Inspectorate of Pedagogy, in collaboration with MTA</b>	<b>SUBJECT CODE NUMBER</b> <b>0570</b>	<b>PAPER NUMBER</b> <b>1</b>
<b>GENERAL CERTIFICATE OF EDUCATION REGIONAL MOCK EXAMINATION</b>	<b>SUBJECT TITLE</b> <b>MATHEMATICS</b>	
CANDIDATE NAME: ..		
CANDIDATE NUMBER: .....		
CENTRE NUMBER: .....		
<b>ORDINARY LEVEL</b>		

**Time Allowed: One and a half hours**  
**INSTRUCTIONS TO CANDIDATES:**

Mobile phones are **NOT ALLOWED** in the examination room.

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 code and subject title—MATHEMATICS -Paper 1".
4. Insert the information required in the spaces above.
5. Without opening the booklet, pull out the answer sheet carefully from inside the front cover of this booklet. Take care that you do not crease or fold the answer sheet or make any marks on it other than those asked for in these instructions.
6. 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:**

7. Answer ALL the 50 questions in this examination. All questions carry equal marks.
8. Non-programmable calculators are allowed.
9. For each question there are four suggested answers, A, B, C and D. Decide which answer 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]
10. 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.
11. Avoid spending much time on any question. If you find a question difficult, move to the next. You can come back to the question later.
12. Do all rough work in this booklet using, where necessary, the blank spaces in the question booklet.
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. 0.001% of 438 is:  
 A. 0.00438  
 B. 0.0438  
 C. 0.000438  
 D. 4.38

2. Factorizing  $10a + 6a^2$  gives:  
 A.  $2a^2(5 + 3a)$   
 B.  $2a(5 + 3a)$   
 C.  $a(10 + 6a^2)$   
 D.  $2a^2(3 + 5a)$

3. The table below shows the number of students in four different schools in Cameroon. The school with the highest number of students is:

Schools	No of students
K	$1.57 \times 10^5$
L	$4.2 \times 10^4$
M	$1.48 \times 10^5$
N	$3.5 \times 10^4$

- A. K  
 B. M  
 C. L  
 D. N

4.  $0.013 \times 4$  expressed in standard form gives:  
 A.  $5.2 \times 10^{-4}$   
 B.  $5.2 \times 10^{-2}$   
 C.  $5.2 \times 10^{-3}$   
 D.  $5.2 \times 10^2$

5. At town A, the temperature is  $-10^\circ\text{C}$  and at town B, the temperature is  $30^\circ\text{C}$ . The increase in temperature between the towns is:  
 A.  $40^\circ\text{C}$   
 B.  $20^\circ\text{C}$   
 C.  $-40^\circ\text{C}$   
 D.  $-20^\circ\text{C}$

6. The approximate value of  $\frac{9.65 \times 0.03}{0.0198}$  to 1 decimal place is:  
 A. 989.3  
 B. 98.9  
 C. 99.0  
 D. 9.9

7. A binary number amongst the numbers below is:

- A. 212  
 B. 21  
 C. 1011  
 D. 22

8. The shaded portion in the Venn diagram below represents:

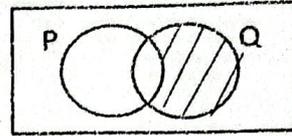


Figure 1.

- A.  $P^1 \cup Q$   
 B.  $P \cap Q^1$   
 C.  $P^1 \cap Q$   
 D.  $(P \cap Q)^1$

9. If  $p$  is the statement: "Douala is in Cameroon", then  $\sim p$  is the statement:

- A. No, Douala is in Cameroon  
 B. Douala is the economic capital of Cameroon  
 C. Nigeria is not in Cameroon  
 D. Douala is not in Cameroon.

10. In the truth table below, the missing value is:

$P$	$\sim P$
F	T
T	

- A. T  
 B. P  
 C.  $\sim P$   
 D. F

11. From the Venn diagram below,  $M \cap L^1$  is:

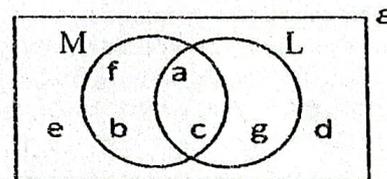


figure 2.

- A.  $\{b, f\}$   
 B.  $\{g\}$   
 C.  $\{a, c\}$   
 D.  $\{e, d\}$

12. Given that  $f(x) = 2x + 6$ , then the value of  $x$  When  $f(x) = 4x$  is:

- A. 3
- B. 2
- C. 1
- D. 6

13. The functions  $f(x) = x + 1$  and  $g(x) = x^2$ , then  $fg(x) =$

- A.  $x^2 - x - 1$
- B.  $x^2 + x + 1$
- C.  $(x + 1)^2$
- D.  $x^2 + 1$

14. In the Pappy graph below,  $t$  is equal to:

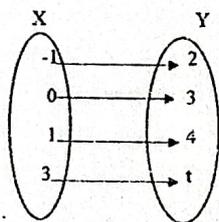


Figure 3.

- A. 3
- B. 4
- C. 5
- D. 6

15. A polygon with exactly five axis of symmetry must be a :

- A. Hexagon
- B. Quadrilateral
- C. Regular pentagon
- D. Regular heptagon

16. An isosceles triangle is a triangle with

- A. a right-angle
- B. two equal sides
- C. no two angles equal
- D. all sides equal

17. The number of sides of a quadrilateral is:

- A. 4
- B. 5
- C. 6
- D. 7

18. Simplifying  $\frac{y^2-9}{2y+6}$  gives:

- A.  $\frac{y+3}{2}$
- B.  $\frac{y-3}{2}$
- C.  $\frac{y-3}{y+2}$
- D.  $\frac{y-3}{y-2}$

19. The shape of the base of a cylinder is:

- A. cone
- B. Square
- C. Triangle
- D. Circle

20. A pair of complementary angles in the following pair of angles is:

- A.  $120^\circ$  and  $60^\circ$
- B.  $60^\circ$  and  $30^\circ$
- C.  $80^\circ$  and  $100^\circ$
- D.  $40^\circ$  and  $140^\circ$

21.

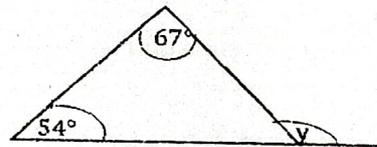


Figure 4.

The value of angle  $y$  above is:

- A.  $54^\circ$
- B.  $67^\circ$
- C.  $57^\circ$
- D.  $121^\circ$

22.  $\sqrt{75}$  simplifies to

- A. 25
- B.  $3\sqrt{5}$
- C.  $5\sqrt{3}$
- D. 15

23. The plan of a house is drawn to scale where 2cm on the plan represents 1m on land. A wall on the plan is 6cm long. The actual length of the wall is:

- A. 6m
- B. 12m
- C. 3m
- D.  $\frac{1}{3}$ m

24. The  $y$ -intercept of a line is  $-6$  and gradient is  $-2$ .  
The equation of this line is:

- A.  $y = 2x + 6$
- B.  $y = -2x + 6$
- C.  $y = 2x - 6$
- D.  $y = -2x - 6$

25. The coordinates of the midpoint of the line segment joining the points  $(4, 0)$  and  $(0, -6)$  are:

- A.  $(-2, 3)$
- B.  $(2, -3)$
- C.  $(4, 6)$
- D.  $(-3, 2)$

26. The distance between the points  $(5, 1)$  and  $(2, -3)$  is:

- A. 25 units
- B. 7 units
- C. 5 units
- D. 4 units

27. If the lines  $y = 5x + 2$  and  $mx + y = 8$  are parallel, then the value of  $m$  is:

- A.  $-5$
- B.  $5$
- C.  $-\frac{1}{5}$
- D.  $\frac{1}{5}$

28. Given that  $\frac{1}{2}a - b = c$ , then  $a$  in terms of  $b$  and  $c$  is:

- A.  $\frac{c+b}{2}$
- B.  $\frac{c-b}{2}$
- C.  $a = \frac{1}{2}bc$
- D.  $a = 2(b+c)$

29. The values of  $x$  for which  $(x-3)(2x+1) = 0$  are:

- A.  $-3, \frac{1}{2}$
- B.  $3, -2$
- C.  $-3, -2$
- D.  $3, -\frac{1}{2}$

30. The value of  $x$  which satisfies the pair of simultaneous equations below is:

$$3x + y = 1 \text{ and } x - 2y = 5$$

- A. 2
- B.  $-2$
- C. 1
- D.  $-1$

31. The number of arcs of a network diagram with 5 nodes and 4 regions is:

- A. 8
- B. 7
- C. 6
- D. 5

32. Solving  $3a^2 - 27$  in the set of natural numbers  $N$  gives:

- A. 3
- B.  $-9$
- C. 9
- D.  $-3$

33. An ogive is:

- A. a frequency distribution
- B. the semi-interquartile range
- C. a cumulative frequency curve
- D. another word for dispersi

34. Given that  $f(x) = x^3 - 4x^2 + dx + 6$ , then the value of  $d$  for which  $f(3) = 0$  is:

- A. 1
- B. 0
- C. 2
- D.  $-1$

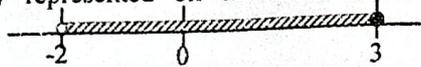
35. The value of  $x$  which satisfies the equation  $2^x = \frac{1}{64}$  is:

- A. 6
- B.  $-3$
- C. 3
- D.  $-6$

36. The transpose of the matrix  $\begin{pmatrix} 4 & 2 \\ 3 & 0 \end{pmatrix}$

- A.  $\begin{pmatrix} 4 & 0 \\ -2 & -3 \end{pmatrix}$
- B.  $\begin{pmatrix} 4 & -3 \\ -2 & 0 \end{pmatrix}$
- C.  $\begin{pmatrix} 4 & 3 \\ 2 & 0 \end{pmatrix}$
- D.  $\begin{pmatrix} 4 & 2 \\ -3 & 0 \end{pmatrix}$

37. The inequality represented on the number line above is:



- A.  $-2 \leq x \leq 3$
- B.  $-2 < x < 3$
- C.  $-2 \leq x < 3$
- D.  $-2 < x \leq 3$

38. Given that  $\sin \theta = \frac{1}{2}$ , then  $\theta =$

- A.  $45^\circ$
- B.  $60^\circ$
- C.  $90^\circ$
- D.  $30^\circ$

39.

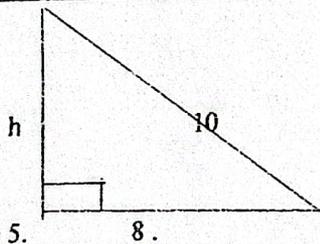


Figure 5.

The value of  $h$  in the figure 5 is:

- A. 36
- B. 2
- C.  $\sqrt{6}$
- D. 6

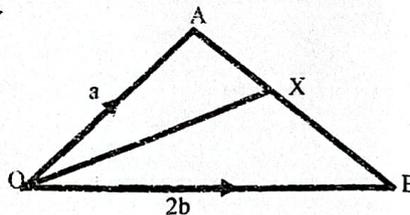
40. Given that  $y$  varies inversely as the square of  $x$  and  $y = 1$  when  $x = -2$ , then equation connecting  $y$  to  $x$  is:

- A.  $y = \frac{4}{x^2}$
- B.  $y = \frac{x^2}{4}$
- C.  $y = \frac{1}{4x^2}$
- D.  $y = \frac{4x^2}{1}$

41. Given the origin  $(0, 0)$  with the points A and B on the Cartesian plane with position vectors  $\vec{OA}$  and  $\vec{OB}$ , the vector  $\vec{AB}$  can be expressed as

- A.  $\vec{AO} - \vec{OB}$
- B.  $\vec{OB} - \vec{OA}$
- C.  $\vec{AO} + \vec{OB}$
- D.  $-\vec{OA} - \vec{OB}$

42.



In the vector diagram above,  $\vec{OA} = a$ ,  $\vec{OB} = 2b$  and X is a point on  $\vec{AB}$  such that  $AX:AB = 1:2$ , then the vector  $\vec{OX}$  is:

- A.  $\frac{1}{3}(10a - b)$
- B.  $\frac{1}{2}(a + 2b)$
- C.  $\frac{2}{3}(a + b)$
- D.  $\frac{1}{3}(4a - 2b)$

43. The point below which does NOT lie on the line  $y = \frac{12}{x}$  is:

- A.  $(6, 2)$
- B.  $(\frac{1}{2}, 24)$
- C.  $(-3, -4)$
- D.  $(3, -4)$

44. Given that  $P = \begin{pmatrix} 2 & 6 \\ 5 & 3 \end{pmatrix}$  and  $Q = \begin{pmatrix} 1 & -2 \\ 3 & 7 \end{pmatrix}$ ,  $P + Q =$

- A.  $\begin{pmatrix} 1 & 8 \\ 2 & -4 \end{pmatrix}$
- B.  $\begin{pmatrix} 20 & 38 \\ 14 & 11 \end{pmatrix}$
- C.  $\begin{pmatrix} 3 & 4 \\ 8 & 10 \end{pmatrix}$
- D.  $\begin{pmatrix} 3 & 8 \\ 8 & 10 \end{pmatrix}$

45.  $M = \begin{pmatrix} 3 & 2 \\ -1 & 1 \end{pmatrix}$ ,  $|M| =$

- A. 1
- B. -5
- C. 5
- D. 7

46. The remainder when  $x^3 + 2x^2 + x + 5$  is divided by  $x - 1$  is:

- A. 7
- B. 9
- C. 3
- D. 5

47. The mode of the distribution 26, 5, 41, 4, 34, 19, 20, 26, 9, 11 is:

- A. 41
- B. 4
- C. 19
- D. 26

48. The range of the distribution 5, 2, -1, 4, 3, 1, 5 is

- A. 0
- B. 6
- C. 4
- D. 7

49. The probability of an event occurring is 0.35. The probability of the event NOT occurring is:

- A. 0.65
- B.  $\frac{1}{0.35}$
- C. 0.35
- D. 0

50. The coordinates of the image of the point (3, -1) reflected in the line  $y = 2$  is:

- A. (1, -1)
- B. (3, 4)
- C. (3, 5)
- D. (0, -1)

END

GO BACK AND CHECK YOUR WORK