GENERAL CERTIFICATE OF EDUCATION (GCE) BOARD
General Certificate of Education Examination

0570 MATHEMATICS 1

JUNE 2021   **ORDINARY LEVEL**

Centre Number	
Centre Name	gcerevision.com
Candidate Identification Number	
Candidate Name	

Mobile phones are NOT allowed in the examination room.

MULTIPLE CHOICE QUESTION 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 THE 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 1".**

4. Fill the information required in the spaces above.

5. Fill the information required in the spaces provided on the answer sheet using your HB pencil:
   Candidate Name, Exam Session, Subject Code and Candidate Identification Number.
   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.

How to answer the questions in this examination

6. Answer **ALL** the **50** questions in this Examination. All questions carry equal marks.

7. **Calculators are 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 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] [C̶] [D]

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 the blank spaces in the question booklet.

12. **At the end of the examination, the invigilator shall collect the answer sheet first and then the question booklet. DO NOT ATTEMPT TO LEAVE THE EXAMINATION HALL WITH IT.**

_____ Turn Over

1. Given the set, of real numbers $\mathbb{R}$, the identity element for multiplication is

  A 1
  B 0
  C -1
  D 2

2. The HCF of 21 and 36 is

  A 3
  B 42
  C 84
  D 6

3. Simplifying $\frac{2}{3} + \frac{1}{4} \div \frac{3}{5}$ gives

  A $\frac{5}{7}$
  B $\frac{11}{20}$
  C $\frac{13}{12}$
  D $\frac{55}{36}$

4. Subtracting 1.9705 from 5 gives

  A 6.9705
  B 3.0295
  C -3.0295
  D 4.9705

5. A fraction equivalent to $\frac{4}{5}$ is,

  A $\frac{9}{10}$
  B $\frac{8}{14}$
  C $\frac{16}{25}$
  D $\frac{24}{30}$

6. 0.00746 correct to 2 decimal places is

  A 0.0075
  B 0.0074
  C 0.01
  D 0.007

7. Expressing $(3 \times 10^{-5})(2 \times 10^{7})$ in standard form is

  A 6.0×10^{2}
  B 6.0×10^{-25}
  C 6.0×10^{-2}
  D 6.0×10^{35}

8. Given that 1Euro is 650FCFA, 65000FCFA in Euros gives

  A 65650
  B 42200
  C 100
  D 64350

9. In a test of 75 marks, a candidate scored 60 marks. The candidate's percentage score is

  A 30
  B 60
  C 80
  D 90

10. There are 180 girls in a mixed school. If the ratio of girls to boys is 4:3, then the total number of students in the school is

  A 135
  B 180
  C 420
  D 315

11. Two sets S and T are defined as follows $S = \{a, b\}$ and $T = \{c, d\}$. The relation that best describes S and T is

  A $S \subset T$
  B $S \cap T = \emptyset$
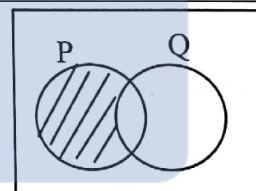 C $T \subset S$
  D $S \cup T = \emptyset$

12.

Figure 1

The shaded portion represented in the Venn diagram in figure 1

  A $P \cap Q^{/}$
  B $P \cup Q^{/}$
  C $P^{/} \cap Q$
  D $P^{/} \cup Q$

13. The truth value of $p \wedge q$ is true when

  A P is true and q is false
  B P is true and q is true
  C P is false and q is true
  D P is false and q is false

14. The image of -3 under the function $f: x \mapsto 7 - x$ is

  A 4
  B -10
  C 10
  D -21

15. Given the Cartesian product, $P \times Q = \{(m,3),(m,5),(n,3),(n,5)\}$. The set Q is

    A $\{m, n\}$
    B $\{3,5\}$
    C $\{m,5\}$
    D $\{n,5\}$

16. The functions f and g are defined on $\mathbb{R}$, the set of Real numbers by $f: x \mapsto x + 2$ and $g: x \mapsto 1 - 4x$, $fg(x)$ is

    A $4x + 3$
    B $4x - 3$
    C $3 - 4x$
    D $4 - 3x$

17. A triangle in which no two sides are equal is

    A   Scalene
    B   Isosceles
    C   Equilateral
    D   Right angle

18. The number of edges of a square-based pyramid is

    A   4
    B   5
    C   8
    D   12

19. The quadrilateral which has four lines of symmetry is

    A   Square
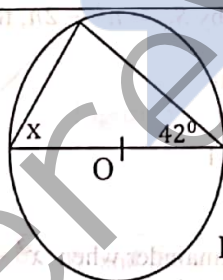   B   Rectangle
    C   Rhombus
    D   kite

20.

Figure 2

In figure 2, O is the centre of the circle. The angle marked x is

    A 42^0
    B 138^0
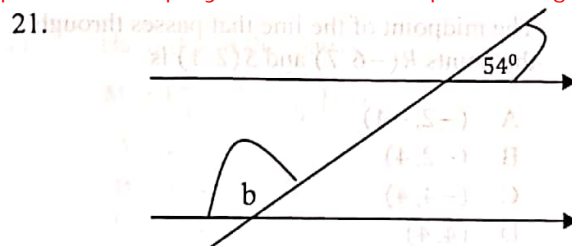   C 90^0
    D 48^0

21.

Figure 3

In figure 3, the size of angle b in degrees is

    A   54
    B   126
    C   136
    D   36

22. The diameter of a circle 14cm. The area of the circle in terms of π

    A 28π
    B 198π
    C 89π
    D 49π

23. The total surface area of a cube of side 8cm is

    A $64 \, cm^2$
    B $24 \, cm^2$
    C $384 \, cm^2$
    D $512 \, cm^2$

24. The area of a square is $144 \, cm^2$, the length in cm of each side is

    A   12
    B   14
    C   16
    D   24

25. The coordinates of the point where the line $2y = x + 3$ cuts the y-axis is

    A $(0, 1.5)$
    B $(-3, 0)$
    C $(0, 3)$
    D $(3, 0)$

26. Two lines are parallel if

    A   The product of their gradients is -1
    B   The product of their gradients is 1
    C   They have the same gradient
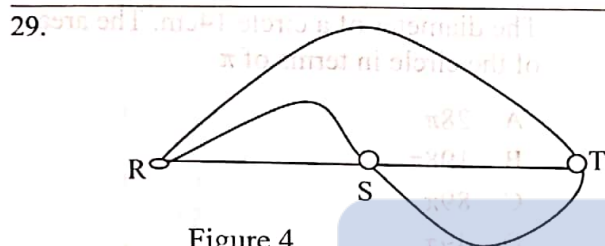   D   The sum of their gradient is -1

Turn Over

27. The midpoint of the line that passes through the points $R(-6, 7)$ and $S(2, 1)$ is

   A $(-2, -4)$
   B $(-2, 4)$
   C $(-4, 4)$
   D $(4, 4)$

28. The equation of the line with gradient 2, passing through the point $(4, 3)$ is

   A $y + 2x + 11 = 0$
   B $y + 2x + 5 = 0$
   C $y - 2x - 11 = 0$
   D $y - 2x + 5 = 0$

29.

Figure 4

The number of arcs in the network in figure 4 is

   A   6
   B   5
   C   4
   D   3

30. Given the expression, $y + 4x - 8$, the coefficient of y is

   A   0
   B   -8
   C   1
   D   -1

31. Given that $p = 3$ and $q = 2$, the value of $p^2 - 2q$ is

   A   5
   B   9
   C   12
   D   13

32. The solution of the inequality $9 - x > 2x$ is

   A $x < 3$
   B $x > 3$
   C $x \leq 3$
   D $x \geq 3$

33. Simplifying $\frac{x}{2} - \frac{x}{3}$ gives

   A $\frac{x}{5}$
   B $\frac{2x}{3}$
   C $\frac{x}{6}$
   D $\frac{5x}{6}$

34. Given that , $3^x = 3^{-5}$ the value of x is

   A   81
   B   -81
   C   -5
   D   5

35. Given that $v^2 = u^2 - 4as$, expressing 's' in terms of v, u and a gives

   A $\frac{v^2 - u^2}{4a}$
   B $\frac{u^2 - v^2}{4a}$
   C $\frac{v^2 + u^2}{4a}$
   D $\frac{v^2}{4a} - u^2$

36. The next term in the sequence $3, 5, 8, 12, \ldots$ is

   A   25
   B   33
   C   20
   D   17

37. The sum of the first n terms of a sequence is given by $S_n = n^2 - 2n$, the first term is

   A   0
   B   1
   C   -1
   D   3

38. The remainder when $x^2 + 2x - 1$ is divided by $x - 1$ is

   A   2
   B   -2
   C   0
   D   -4

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39. The sum of the interior angles of a right-angled triangle is
   A   90°
   B   180°
   C   270°
   D   360°

40. Given that $\sin \emptyset = \frac{1}{2}$, where $\emptyset$ is an acute angle, the value of $\emptyset$ in degrees is
   A   90
   B   60
   C   45
   D   30

41. The point Q is on a bearing of $050°$ from the point P. The bearing of the point P from the point Q is
   A $050°$
   B $230°$
   C $130°$
   D $140°$

42. The unit vector parallel to the vector $3i + 4j$ is
   A $-3i - 4j$
   B $4i + 3j$
   C $\frac{3}{5}i + \frac{4}{5}j$
   D $-\frac{3}{5}i - \frac{4}{5}j$
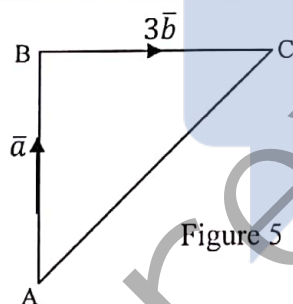
43.

Figure 5

In figure 5, $\overrightarrow{AB} = \bar{a}$ and $\overrightarrow{BC} = 3\bar{b}$. The vector $\overrightarrow{AC}$ terms of $\bar{a}$ and $\bar{b}$ is
   A $\bar{a} - 3\bar{b}$
   B $3\bar{b} - \bar{a}$
   C $-\bar{a} - 3\bar{b}$
   D $\bar{a} + 3\bar{b}$

44. The order of the matrix,
   $M = \begin{pmatrix} 2 & 0 & 11 \\ 4 & 13 & 5 \end{pmatrix}$, is
   A   2×3
   B   3×2
   C   2×2
   D   2×4

45. The '2×2' identity matrix for multiplication is
   A $\begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$
   B $\begin{pmatrix} 1 & 1 \\ 1 & 1 \end{pmatrix}$
   C $\begin{pmatrix} 1 & 0 \\ 0 & 0 \end{pmatrix}$
   D $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$

46. The transformation matrix $\begin{pmatrix} 2 & 1 \\ 2 & 3 \end{pmatrix}$ maps the point Q $(3, 2)$ to the point Q' with coordinates;
   A $\begin{pmatrix} 8 \\ 12 \end{pmatrix}$
   B $\begin{pmatrix} 7 \\ 10 \end{pmatrix}$
   C $\begin{pmatrix} 4 \\ 0 \end{pmatrix}$
   D $\begin{pmatrix} 1 \\ -2 \end{pmatrix}$

47.

x	6	7	8	9	10	12
f	1	1	3	2	2	1

Figure 6

The mode in the distribution in figure 6 is
   A   1
   B   3
   C   8
   D   12

48. The median of the following data 42, 32, 36, 39, 47, 46, 43 is
   A   32
   B   42
   C   36
   D   46

Turn Over

49. Given the frequency distribution table for marks scored by a group of students in a test

marks	0	1	2	3
frequency	1	3	7	5

The mean mark is

A 2
B 3
C 5
D 6

50. From a well shuffled pack of cards, one card is drawn, the probability that it is a club is

A $\dfrac{1}{3}$

B $\dfrac{4}{52}$

C $\dfrac{1}{52}$

D $\dfrac{1}{4}$

STOP

GO BACK AND CHECK YOUR WORK