WEST MATHEMATICS TEACHERS' PEDAGOGIC GROUP

GENERAL CERTIFICATE OF EDUCATION MOCK EXAMINATION

0570 MATHEMATICS 1

28th MARCH, 2023 **ORDINARY LEVEL**

Centre Number	
Centre Name	
Candidate Identification No.	
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 in the information required in the spaces above.
5. Fill in 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 erase 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 which answer is appropriate. 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 a 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 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 then the question booklet. DO NOT ATTEMPT TO LEAVE THE EXAMINATION HALL WITH IT.**

1. Simplifying $\frac{1}{4}$ of $(-4+8)$ gives

A 1

B -1

C 3

D 7

2. 0.995 written correct to two decimal places is

A 0.99

B 0.10

C 1.00

D 1.0

3. The number 0.000420 in standard form is

A 4.2×10^{-5}

B 4.2×10^{-4}

C 4.2×10^{4}

D 4.2×10^{-3}

4. An equivalent fraction to $\frac{4}{7}$ is

A $\frac{7}{4}$

B $\frac{16}{28}$

C $\frac{12}{14}$

D $\frac{24}{28}$

5. Mr. Abe sold a car for 2.4 million FCFA making a loss of 20% on the cost price. The cost of the car was

A 2,500,000 FCFA

B 1,920,000 FCFA

C 2,880,000 FCFA

D 3,000,000 FCFA

6. A school has 400 students, 150 of whom are boys. The ratio of girls to boys is

A 3 : 2

B 3 : 5

C 5 : 3

D 8 : 5

7. Given that $62_x = 44$, then the value of x is

A 10

B 9

C 8

D 7

8. Expressing 80 as a product of its prime factors gives

A $2^3 \times 5$

B 2×5^3

C $2^2 \times 5^2$

D $2^4 \times 5$

9. The combination that best describes the sets in the Venn diagram in fig 1 below is

A $P = Q$

B $P \cap Q = \phi$

C $P \cap Q = 0$

D $P \subset Q$

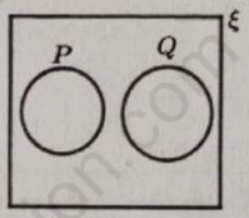

Fig. 1

10. Given the sets $M = \{a, b, c\}$ and $N = \{1, 2, 3\}$, then $M \cap N =$

A $\{\}$

B $\{\phi\}$

C $\{0\}$

D 0

11. $\frac{1}{x^2}$ is the same as

A $-\frac{1}{x^2}$

B $-x^2$

C x^{-2}

D $-x^{-2}$

12. Given that $2^{-2y} = 64$, then the value of y is

A -3

B 3

C 6

D -6

13. The solution of the inequality $2 - 3x > 8$ is

A $x > 2$

B $x < 2$

C $x > -2$

D $x < -2$

14. The coefficient of x in the expression $\frac{1}{4}(2y - 4x + 4x^2)$ is

A 1

B -1

C $\frac{1}{2}$

D -4

15. The highest common factor in the algebraic expression $3x^2 - 15x$ is

A $3x$

B 3

C $5x$

D $3x^2$

16. The equation of the curve in Fig.2 below is

A $y = x^2 - 5x + 6$

B $y = x^2 - x - 6$

C $y = x^2 + x - 6$

D $y = x^2 - 6x + 8$

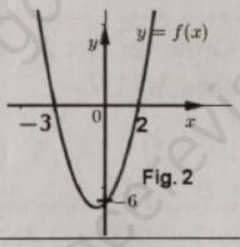

Fig. 2

17. The function that best describes the mapping in fig. 3 below is

A $x \mapsto x$

B $x \mapsto x + 1$

C $x \mapsto x - 1$

D $x \mapsto 2x$

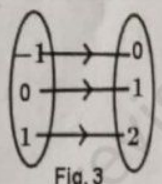

Fig. 3

18. The function $g : x \mapsto x^2 + 1$ is defined on $\mathbb{R}$, the set of real numbers. The image of -3 is

A -8

B 10

C 4

D -3

19. The number of faces on a triangular pyramid is

A 4

B 5

C 6

D 3

20. The perimeter of a square is 36 cm. The area of the square is

A 9 cm^2

B 6 cm^2

C 36 cm^2

D 81 cm^2

21. Expanding $(1 + x)(2 - 3x)$ gives

A $2 - x - 3x^2$

B $2 + x - 3x^2$

C $2 - 5x - 3x^2$

D $2 - x + 3x^2$

22. Simplifying $\frac{4x + 16}{x^2 - 16}$ gives

A $\frac{4}{x^2}$

B $\frac{4x}{x - 4}$

C $\frac{4}{x - 4}$

D $\frac{4x}{x^2}$

23. Given that $u_n = a + (n - 1)d$, expressing d in terms of u_n, a and n gives

A $\frac{u_n + a}{n - 1}$

B $\frac{u_n - a}{n + 1}$

C $u_n + a - n + 1$

D $\frac{u_n - a}{n - 1}$

24. The next term in the sequence $1, 4, 8, 13, 19, \cdots$ is

A 22

B 23

C 24

D 26

25. The difference between the fifth term and the eighth term of the sequence $2, 5, 8, 11, \cdots$ is

A 3
B 9
C 14
D 23

26. Given that $x = 2y - 1$ and $2x = 3y + 2$, then $y =$

A 4
B 7
C -4
D -7

27. Each interior angle of a regular hexagon is

A 30^o
B 60^o
C 120^o
D 180^o

28. The value of the angle marked w in figure 4 below is

A 105^o
B 75^o
C 65^o
D 25^o

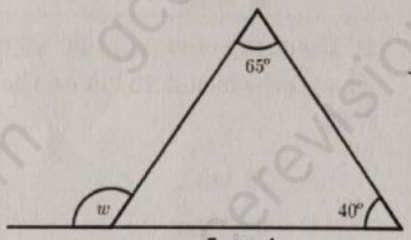

figure 4

29. Figure 5 is a circle with centre O. The value of angle b is

A 105^o
B 75^o
C 210^o
D 150^o

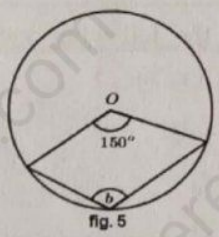

fig. 5

30. The length of the straight line joining the points $(1, 6)$ and $(-3, 3)$ is

A 10 units
B 6 units
C 4 units
D 5 units

31. The line $3x - 2y = 6$ cuts the $x-$axis at the point

A $(0, 2)$
B $(2, 0)$
C $(0, 3)$
D $(3, 0)$

32. The coordinates of the point A on the Cartesian plane in figure 6 below is

A $(2, 3)$
B $(-3, -2)$
C $(-2, -3)$
D $(3, 2)$

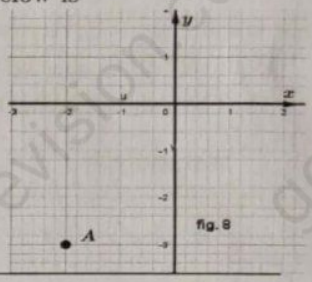

fig. 6

33. The negation of the statement "Peter is handsome" is

A Peter is beautiful
B Peter is hardworking
C Peter is stupid
D Peter is not handsome

34. Consider the proposition:

p : Joan is short
q : Joan is fat

The statement "Joan is short and not fat" in symbolic form is

A $\sim p \wedge q$
B $p \wedge \sim q$
C $\sim (p \wedge q)$
D $p \implies \sim q$

35. The trigonometric ratio which is positive in the third quadrant is

A sine
B cosine
C tangent
D cosecant

36. Given that $\cos A = \frac{4}{5}$, where A is an acute angle, then $\sin A =$

A $\frac{3}{5}$

B $-\frac{4}{5}$

C $\frac{4}{5}$

D $\frac{5}{4}$

---

37. The value of a for which the matrix $\begin{pmatrix} -4 & a \\ 2 & 1 \end{pmatrix}$ is singular is

A 8

B -6

C 2

D -2

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38. The matrix product $\begin{pmatrix} 3 & 0 \\ 1 & 2 \end{pmatrix}\begin{pmatrix} 7 \\ 5 \end{pmatrix}$ is

A $\begin{pmatrix} 21 & 0 \\ 0 & 10 \end{pmatrix}$

B $\begin{pmatrix} 21 \\ 17 \end{pmatrix}$

C $\begin{pmatrix} 21 & 0 \\ 7 & 10 \end{pmatrix}$

D $\begin{pmatrix} 26 \\ 17 \end{pmatrix}$

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39. A transformation in which there is a change in shape of the object is

A an enlargement

B a reflection

C a rotation

D a stretch

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40. The point $(4, 3)$ is reflected in the $x-$axis, the coordinates of its image are

A $(-4, -3)$

B $(-4, 3)$

C $(4, -3)$

D $(4, 0)$

---

41. Given that y varies directly as x and that $y = 20$ when $x = 4$, the value of y when $x = 3$ is

A 23

B 15

C 12

D 60

---

42. A rectangle has a length of 4 cm and a diagonal of 5 cm. The area of the rectangle is

A 12 cm^2

B 20 cm^2

C 40 cm^2

D 10 cm^2

---

43. On a map of scale 1 : 50000 the actual length of a road which is 15 cm on the map in kilometres is

A 75 km

B 0.75 km

C 7.5 km

D 750 km

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44. Which of the following vectors is parallel to $3\mathbf{i} - 2\mathbf{j}$?

A $-6\mathbf{i} + 4\mathbf{j}$

B $2\mathbf{i} - 3\mathbf{j}$

C $3\mathbf{i} + 2\mathbf{j}$

D $9\mathbf{i} + 6\mathbf{j}$

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45. Given the vectors $\mathbf{a} = 2\mathbf{i} - \mathbf{j}$ and $\mathbf{b} = -\mathbf{i} - 3\mathbf{j}$ and that $\mathbf{a} - \mathbf{c} = \mathbf{b}$, the vector $\mathbf{c}$ is

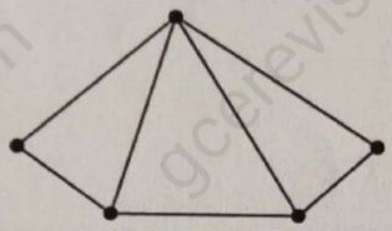
A $3\mathbf{i} + 2\mathbf{j}$

B $\mathbf{i} - 4\mathbf{j}$

C $-3\mathbf{i} + 2\mathbf{j}$

D $\mathbf{i} + 4\mathbf{j}$

46. The number of even nodes in the network in fig. 7 is



A 5

B 4

C 2

D 3

47. The mode of the scores $3, 5, 5, 4, 8, 10, 4, 12, 7, 3, 5$ is

A 4

B 5

C 6

D 12

48. The average if the numbers $6, 3, x$ and 8 is 12. The value of x is

A 1

B 9

C 21

D 31

49. A pie chart is drawn with sections representing the following percentages: 20%, 50%, 25% and 5%. The angle which represents 25% is

A 25^o

B 180^o

C 90^o

D 75^o

50. There are 3 blue and 2 red pens in a bag. Two pens are drawn at random with the first replaced before the second is selected. The probability that both pens are blue is

A $\frac{9}{25}$

B $\frac{4}{25}$

C $\frac{21}{25}$

D $\frac{6}{25}$

STOP

GO BACK AND CHECK YOUR WORK