210
L. J. H. S. C. E. 2024
MATHEMATICS
Objective Test

1

THE WEST AFRICAN EXAMINATIONS COUNCIL

Liberia Junior High School Certificate Examination

MATHEMATICS 1

PAPER 1
OBJECTIVE TEST
[40 marks] **1½ hours**

Answer **all** the *questions.*

Paper **1** *contains* **fifty** *objective questions. Each question is followed by* **four** *options lettered* **A** *to* **D.** *Choose the correct option for each question and then shade in* **pencil** *on your answer sheet the answer space which bears the same letter as the option you have chosen. Give only* **one** *answer to a question.*

An example is given below.

What is the ratio of 15 to 25?
A. 2:3
B. 3:2
C. 3:5
D. 5:3

The correct answer is **3:5**, *which is letter* **C**, *and therefore answer space* **C** *would be shaded.*

⊏A⊐ ⊏B⊐ ⊏C⊐ ⊏D⊐

Think carefully before you shade the answer spaces; erase **completely** *any answer(s) you wish to change.*

Do all rough work on this question paper. Now answer the following questions.

1. Add: 168.3 + 98.432 + 0.875 + 397.
A. 864.607
B. 764.607
C. 664.607
D. 564.607

2. A triangle with two equal sides is called a/an
A. obtuse triangle.
B. isosceles triangle.
C. equilateral triangle.
D. right triangle.

3. Write the figure 456, 007 in words.
A. Four hundred fifty-six thousands, seven hundreds
B. Four hundred thousand, fifty- six hundred and seven
C. Four hundred fifty-six thousands, seven
D. Four hundred six thousand, fifty-six and seven

4. What is 217.84 rounded off to the *nearest tenth?*
A. 217.80
B. 220.00
C. 227.84
D. 228.80

5. Express 1.25 as a mixed fraction in **lowest term.**
A. $1\frac{5}{20}$
B. $1\frac{4}{25}$
C. $1\frac{1}{4}$
D. $1\frac{25}{100}$

6. Simplify the expression $4(x^3y^0) \cdot 3(xyz)^0$
A. $3x^4$
B. 12x3yz
C. $4x^3yz$
D. $12x^3$

7. Solve and simplify 3[4-(8-9) -12(9÷3)].
A. -93
B. -23
C. 36
D. 90

8. What is the *least common multiple (LCM)* of 10, 16 and 40?
A. 40
B. 64
C. 80
D. 90

9. If $f(x) = 4x^2-3x-1$, find $f(-2)$.
A. 16
B. 21
C. -23
D. -36

10. Simplify:$2x[3(x-1)-2(y+1)]$.
A. $6x^2-4xy-10x$
B. $6x-4y-10x^2$
C. $4xy-10x-6x^2$
D. $6x^2-4xy-4x$

11. A piece of plank 170cm long is reduced by 20% of its length. Calculate the plank's new length.
A. 136cm
B. 146cm
C. 156cm
D. 166cm

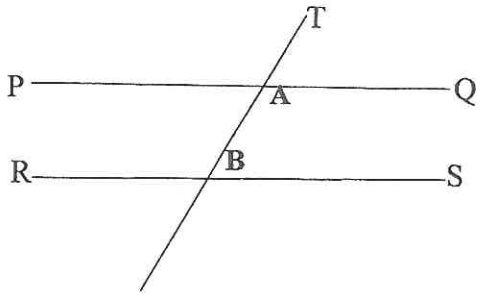
12. Calculate the measure of *each* of the exterior angles of a regular Pentagon.
A. 360°
B. 108°
C. 60°
D. 72°

13. Factorize completely the expression $3b^2-48$.
A. (b+4)(b+4)
B. (b+4)(b-4)
C. 3(b+4)(b-4)
D. 3(b-4)(b-4)

14. The area of a circle is 200.96 cm^2. Calculate the radius of the circle, given $\pi = 3.14$.
A. 64 cm
B. 12.56 cm
C. 8 cm
D. 6.28 cm

Use the diagram below to answer questions. **15-17.** *In the diagram below, PQ and RS are two parallel lines and T is a transversal.*

$< A = 2x+10$ and $< B = 3x-20$



15. Calculate the value of X.
A. 38
B. 34
C. 6
D. 4

16. Calculate the measure of $< A$.
A. 68°
B. 76°
C. 86°
D. 94°

17. Calculate the measure of $< B$.
A. 114°
B. 102°
C. 94°
D. 82°

18. Simplify the expression: $\frac{10x^6y^4}{2x^3y^2}$.
A. $5x^3y^2$
B. $5x^9y^6$
C. $5x^2y^2$
D. $5x^6y^4$

19. A car travels 3, 320 km in 5 hours with a constant speed. In how many hours will it travel 4,240 km?
A. 5.0 hours
B. 6.4 hours
C. 7.5 hours
D. 8.0 hours

20. The longest side of a right- angled triangle is called the
A. longest leg.
B. altitude.
C. base.
D. hypotenuse.

21. What is the solution set of the system of equation below?
$y = x-1$
$2x - y = 0$
A. (1,2)
B. (-1,2)
C. (1,-2)
D. (-1,-2)

22. Make x the subject of the relation $3t = \frac{5d}{x} - 4$.

A. $x = \frac{5d}{t} - 4$

B. $x = \frac{5d}{3t+4}$

C. $x = \frac{5t}{3d+4}$

D. $x = \frac{5d}{3t-4}$

23. Which of the following statements describes a line segment? A/An
A. indefinite line that extends in both directions.
B. line that begins at a point and extends indefinitely in one direction.
C. line that has two end points.
D. line that is curved.

24. If the exchange rate in Liberia is 1USD to 190LD. How much will Daddy receive if he changes $30.00 USD?
A. $ 30.00LD
B. $ 150.00 LD
C. $191.00LD
D. $5,700.00LD

25. Express 2133_8 to base ten numeral.
A. 1094
B. 1151
C. 1115
D. 1067

26. Arrange the following fractions in ascending order: $\frac{1}{2}, \frac{1}{5}, \frac{2}{5}, \frac{1}{6}$.

A. $\frac{1}{2}, \frac{2}{5}, \frac{1}{5}, \frac{1}{6}$

B. $\frac{1}{6}, \frac{1}{5}, \frac{2}{5}, \frac{1}{2}$

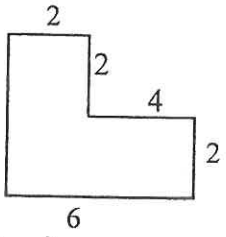
C. $\frac{1}{5}, \frac{1}{6}, \frac{2}{5}, \frac{1}{2}$

D. $\frac{1}{2}, \frac{1}{5}, \frac{2}{5}, \frac{1}{6}$

27. If y varies inversely as the square of x and $y = 4$ when $x = 25$, find y when $x = 10$.
A. 2500
B. 625
C. 100
D. 25

28. A set of relations is given by the equation: $y = x^2-2$. If the set of domains for this relation are $\{ x: x = -1, 0, 1, 2, 3\}$. Find the corresponding range.
A. $\{ -2, -1, 2, 7\}$
B. $\{ 1, 2, 1, 3\}$
C. $\{ 0,1, 2, -4\}$
D. $\{ -2,3,4,5\}$

29. In the diagram below, all dimensions are measured in centimeters (cm), while all angles are right angles. Calculate the area of the figure.



A. 12 cm^2
B. 16 cm^2
C. 18 cm^2
D. 24 cm^2

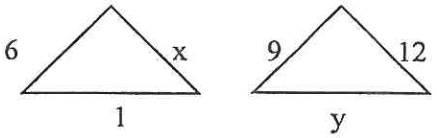
30. What is the value of five hundredth written in figure?

A. 0.05
B. 500
C. 0.005
D. 0.500

31. In a class of 30 students, 12 are girls. What is the ratio of boys to girls in the class?

A. 3:2
B. 4:5
C. 2:3
D. 2:5

32. In the diagram below, find the length of the side marked x.



[*Figures are not drawn to scale*]

A. 18
B. 10
C. 8
D. 3

33. A pole 3ft high is directly 4ft away from a spot horizontally on the ground. At what angle with the horizontal will a viewer see a bird sitting on top of the pole?

A. 36.8°
B. 53.1°
C. 48.5°
D. 30.0°

34. Solve and simplify the expression:

$\frac{3}{4}(x+2) = \frac{2}{3}(x+4)$.

A. 32
B. 14
C. 12
D. 8

Use the information provided below to answer question **35** to **37**. *A card is drawn from a deck of 52 cards.*

35. What is the probability that a card drawn from the deck will be a heart?

A. $\frac{1}{4}$
B. $\frac{1}{3}$
C. $\frac{1}{52}$
D. $\frac{3}{13}$

36. What is the probability that a card selected will be a queen?

A. $\frac{1}{4}$
B. $\frac{1}{52}$
C. $\frac{1}{26}$
D. $\frac{1}{13}$

37. What is the probability that the card is a jack of diamond?

A. $\frac{1}{13}$
B. $\frac{1}{4}$
C. $\frac{4}{13}$
D. $\frac{3}{13}$

Turn over

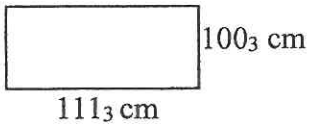
38. Find the value of y in the equation $\log_{\frac{1}{3}} \frac{1}{27} = y$.
A. 3
B. -3
C. 3/2
D. 2/3

39. Simplify: $(x^2 - 6x + 8) \div (x-2)$.
A. (x-4)
B. (-x+4)
C. (-x-4)
D. (x+4)

40. Every morning, Messi walks around his compound before going for practice. The times he walked in minutes from Monday to Friday are 5,10,15,20,10. What is the player's total times walked in hours?
A. 60 hours
B. 20 hours
C. 12 hours
D. 1 hour

41. Which of the following ordered-pairs is a set of reciprocal?
A. (3, -3)
B. (3 , 1/3)
C. (1/2, -1/2)
D. (-4, 4)

Use the diagram below to answer questions **42-44.**



42. What is the perimeter of the figure?
A. 1122_3 cm
B. 2222_3 cm
C. 200_3 cm
D. 211_3 cm

43. Calculate the area of the figure.
A. 1100_3 cm^2
B. 1110_3 cm^2
C. 11100_3 cm^2
D. 2110_3 cm^2

44. The figure can **best be** described as a
A. square.
B. rhombus.
C. rectangle.
D. trapezoid.

45. What is the number, if 50 is increased by 50%?
A. 150
B. 100
C. 75
D. 25

46. Solve for y: $3\sqrt{y} + 4 = 10$.
A. 36
B. 9
C. 4
D. 2

47. Three sisters, Siah, Finda and Kumba were given $3,600.00 to share in the ratio 4:3:2. What will be Siah's share of the amount?
A. $ 1,600.00
B. $ 1,200.00
C. $ 800.00
D. $ 400.00

48. A farmer has 5x sheep and 6y goats. If he sold 3x sheep and 2y goats. What will be the total number of animals left on the farm?
A. 2x + 4y
B. 3x +3y
C. 6y-5x
D. 5xy

49. Simplify the expression: $\sqrt{20} + \sqrt{80} - \sqrt{45}$.
A. $3\sqrt{5}$
B. $5\sqrt{5}$
C. $9\sqrt{5}$
D. $\sqrt{5}$

50. The sum of three consecutive odd integers is 57. Find the *largest*.
A. 24
B. 21
C. 19
D. 17

END OF PAPER