NECO GCE MATHEMATICS PAST QUESTIONS FROM 2022 TILL DATE

1.If 5x - 3 = 4x - 7, what is the value 6x?

A 24

B 6

C 4

D -4

E -24

2. P = {x:(x - 2)(x + 3) (x - 4)(x + 5) = 0}. The elements in P are

A. -5,-2, 3, 4

B. -5, -3, 2, 4

C. -5, -3, -2,4

D. -4, -3, -2, 5

E. 2, 3, 4, 5

3. Find the value of log3√ 81

A. 81

B. 16

C. 8

D. 3

E. 3–√

4. The median of a distribution can be estimated from

A. Barchart

B. Cumulative frequency curve

C. Frequency polygon

D. Pictorial

E. Pie chart

5. If A = 12h (a + b), make 'a' the subject of the formula

A. (2A – 2bh) ÷ b

B. (2A – bh) ÷ h

C. (2A – bh) ÷ b

D. (A – 2bh) ÷ h

E. (2A – h) ÷ bh

6. The graph of cumulative frequency distribution is known as

A. an ogive

B. a histogram

C. a frequency polygon

D. relative frequency

E. none

7. T varies inversely as the square root of F when T = 7, F = 214. Find T when F = 279

A. 1.5

B. 6.1

C. 6.3

D. 12.6

E. 21

8. Evaluate $(2^5 \times 4^{-2}) \div (2^{-3} \times 2^6)$

A. 9

B. 8

C. 3

D. 89

E. 14

9. Rationalize the expression (7−3√)(13−3√)

A. (44 + 33–√) ÷ 83

B. (44 + 23–√) ÷ 83

C. (44 - 33–√) ÷ 83

D. (44 - 43–√) ÷ 83

E. (44 - 23–√) ÷ 83

10. In proving the congruence of two triangles, which of the following is not important?

A. two sides and the included angles

B. two angles and a side

C. three sides

D. three angles

E. right angle, hypotenuse and another side

11. Bello chooses a number randomly from 1 to 10. What is the probability that it is either odd or prime?

A. 1/10

B. 2/5

C. 1/2

D. 3/5

E. 9/10

12. If tan α = 12 and tan β = 13 and both α and β are acute, find tan (α + β).

A. 0.015

B. 1

C. 10

D. 39.81

E. 45

13. Multiply (3a––√ - 4a) by (4a + 3a––√)

A. $9a + 16a^2$

B. $9a – 16a^2$

C. $3a + 16a^2$

D. $3a - 16a^2$

E. $a - 16a^2$

14. Which of the following angular inequalities defines an obtuse angle?

A. $0° < x < 90°$

B. $0° \leq x > 180°$

C. $90° < x < 180°$

D. $90° \leq x < 180°$

E. $90° > x < 180°$

15. If $y + 1y = 9$, evaluate $y^2 + 1y2$

A. 27

B. 38

C. 54

D. 63

E. 79

16. If N25,000.00 is kept in a bank at the rate of 2% simple interest, how much will it amount to at the end of 5 years?

A. N2,500.00

B. N5,000.00

C. N12,500.00

D. N27,500.00

E. N125,000.00

17. Construct a quadratic equation whose roots are -32 and 7

A. $3x^2 + 11x + 21 = 0$

B. $2x^2 + 11x + 21 = 0$

C. $2x^2 - 11x – 21 = 0$

D. $3x^2 - 11x - 21 = 0$

E. $x^2 - 11x – 21 = 0$

18. A chord XY of a circle with centre O and radius 5.32cm has $\angle XOY = 140°$. What is the length of the chord to the nearest centimetre?

A. 10cm

B. 6cm

C. 5cm

D. 3cm

E. 1cm

19. 2 bags of sugar at N_x per bag are mixed with 3 bags of sugar at N_y per bag. What is the cost in N of the mixture per bag?

A. (2x+3y)5

B. (x+y)2

C. x2+y3

D. (x+y)5

E. (3x+2y)5

20. The ages of 10 students in a class are; 15, 16, 15.5, 17, 14.9, 14.5, 14.1, 15.1, 14.8. find the range of their ages.

A. 6.1

B. 4.8

C. 2.9

D. 2.1

E. 1.9

21. If the 3rd and the 5th terms of an A.P are 6 and 10 respectively, find the 1st term and the common difference respectively.

A. 1, 2

B. 2, 2

C. 2, 3

D. 3, 2

E. 3,3

22. A pair of shoes was sold for N2,250.00 at a loss of 10%. What was the cost price?

A. N750.00

B. N2,500.00

C. N2,538.00

D. N3,288.00

E. N4,038.00

23. Find the coefficient of xy in the expansion of (x - 4y)(3x + 2y)

A. 14

B. 12

C. 10

D. -10

E. -12

24. Find y if sin y = cos 48°

A. 21°

B. 24°

C. 42°

D. 48°

E. 102°

25. Simplify the expression: Log416 + Log327 + Log84096

A. -9

B. 13

C. 19

D. 3

E. 9

26. The radii of two similar cylindrical jugs are in the ratio 3:7. Calculate the ratio of their volumes

A. 1 : 04

B. 3 : 07

C. 9 : 49

D. 0.086111111

E. 27 : 343

27. A man travels at a rate of 25m/sec. If he travels for 10½hrs, how many kilometres has he covered?

A. 262.5

B. 945

C. 970

D. 995

E. 1822.9

28. The ages of Abu, Segun, Kofi and Funmi are 17 years, (2x -13) years, 14 years and 16 years respectively. What is the value of x if their mean ages is 17.5 years?

A. 18

B. 23

C. 25

D. 36

E. 70

29. Find the mean deviation of 20, 25, 21, 27, 28, 29, to the nearest whole number

A. 2

B. 3

C. 4

D. 5

E. 6

30. Calculate the area of a parallelogram whose diagonals are of length 8cm and 12cm and intersect at an angle of 135°

A. 271.5cm^2

B. 135.8cm^2

C. 96.0cm^2

D. 48.0cm^2

E. 33.9cm^2

31. The ratio of the base area of a hollow cone to that of its curved surface is 1:4. If its base radius is 7cm, calculate the slant height of the cone

A. 7cm

B. 22cm

C. 28cm

D. 49cm

E. 154cm

32. Increase 135 in the ratio 3:5

A. 225

B. 216

C. 143

D. 140

E. 140

33. Given that x2 + y2 + k = 60 and x = 10−−√ when y = 4, find the value of k.

A. 56

B. 34

C. 32

D. -34

E. -56

34. Twenty girls and y boys sat on an examination. The mean marks obtained by the girls and boys were 52 and 57 respectively. if the total score for both girls and boys was 2750, find y.

A. 51

B. 48

C. 30

D. 25

E. 18

35. A sector of angle 120° is cut out from a circle of radius 13.5cm. what area of the circle is remaining ? ($\pi = 227$)

A. 14.1cm^2

B. 95.5cm^2

C. 190.9cm^2

D. 381.9cm^2

E. 763.7cm^2

36. Two ladders of length 5m and 7m lean against a pole and make angles 45° and 60° with the ground respectively. What is their distance apart on the pole correct to two decimal places?

A. 9.60m

B. 6.06m

C. 2.54m

D. 2.53m

E. 2.00m

37. The chances of Usman and Dele passing a Mathematics test are 12 and 13 respectively. What is the probability that neither of them passes the test?

A. 3/5

B. 2/5

C. 4/15

D. 1/5

E. 2/15

38. x varies directly as y and inversely as z. when x = 5, y = 2 and z = 1. What is the value of x when y = 5 and z = 2?

A. 2.5

B. 5

C. 6.25

D. 6.52

E. 7.5

39. If $25a^2 = 5^{-1} \times 125$. Find the value of a?

A. a = -1

B. a = 1

C. a = ±1

D. a = ±5

E. a = 25

40. The parallel sides of a trapezium are 13cm and 7cm. If the area of the trapezium is 50cm2, find the perpendicular distance between the parallel sides.

A. 5cm

B. 6cm

C. 7cm

D. 10cm

E. 12cm

41. Two fair dice are tossed together once. What is the probability of getting a total of at least 9 from the outcome?

A. 1/9

B. 1/6

C. 5/18

D. 1/3

E. 13/18

42. If 2x : (x + 1) = 3 : 2, what is the value of x?

A. 1/2

B. 1

C. 1^1/2

D. 3

E. 3^ ½

43. If y^2+ 14y + k is a perfect square, then k =

A. 4

B. 7

C. 28

D. 49

E. 196

44. Find the standard deviation of the numbers 6, 9, 10, 8 and 7

A. 1.4

B. 2

C. 2.4

D. 5

E. 8

45. Simplify $P^{-6} \times P^3 \times P^2 \div P^4 \times P^0$

A. p^5

B. p^4

C. p^3

D. p^{-3}

E. p^{-5}

46. 3 - 7, 8 - 12, 13 - 17, 18 - 22. Which of the following is/are true?
I. The class Interval is 4
II. The class boundaries are 2.5, 7.5, 12.5, 18.5, 22.5
III. The mid-marks are 5, 10, 15, and 20

A. I only

B. II only

C. III only

D. I and II only

E. I and III only

47. T varies directly as D and inversely as A. Given that T = 6, D = 3, and A = 2, find A when T = 3 and D = 6.

A. 4

B. 6

C. 8

D. 12

E. 24

48. A chord 20cm long subtends an angle of 60° at the circumference of a circle, what is the diameter of the circle the nearest cm?

A. 12cm

B. 20cm

C. 23cm

D. 60cm

E. 80cm

49. Calculate without using tables Tan 45° + Cos 60°

A. 3/2−−√ - 1

B. 1/2

C. 1^1/2

D. 3/2−−√ + 1

E. 2

50. A is at 50°N and B is at 10°N, If A and B are on the same longitude, find the distance AS. Correct your answer to Four significant figures. (Earth radius = 6400km)

A. 6468km

B. 5469km

C. 4470km

D. 3470km

E. 2488km

51. If a = {x : 1 < x < 9} ; b = {x : 0 < x < 9} ; C = {x : 2 x < 9} and a, b, c U, what are the elements in U?

A. U = {-1 < x < 9}

B. U = {0 < x < 9}

C. U = {1 < x < 9}

D. U = {1 < x < 10}

E. {2 < x < 10}

52. If log 3 = 0.4771 and log 2 = 0.3010, what is the value of log 12?

A. 0.0432

B. 0.4322

C. 1.0791

D. 1.2552

E. 1.5225

53. If 7 is subtracted from twice a certain number x, the result is at most 5. What is the range of the number?

A. $x < 2$

B. $x < 3$

C. $x < 4$

D. $x < 5$

E. $x < 6$

54. A surveyor measured the length of a obtained 42.55 metres. If his measurement was more than the actual length and the percentage error of his measurement was 8%, calculate the actual length of the land

A. 39.40 metres

B. 46.20 metres

C. 46.25 metres

D. 46.50 metres

E. 48.25 metres

55. If x + 1x = 8, find x2 + 1x2

A. 64

B. 62

C. 32

D. 16

E. 4

56. Evaluate 0.0025 × 2.5 × 102 to 2 significant figures.

A. 0.625×10^{-3}

B. 0.63×10^{-2}

C. 6.25×10^{-3}

D. 6.3×10^{-2}

E. 6.3×10^{-1}

57. What is the Value of 11101two+ 10011two - 10001two?

A. 10001two

B. 10011two

C. 10111two

D. 11111two

E. 111111two

58. A ship sails 6km from a port on a bearing 070° and then 8km on a bearing of 040°. Find the distance from the port.

A. 7.21km

B. 13.53km

C. 16.86km

D. 44.57km

E. 67.17km

59. What is the positive difference between the squares of 2.5 and 2.1 to 1 significant figures?

A. – 2.0

B. – 184

C. -1.84

D. 2

E. 18.4

60. Find the value of 2a - b if a + b = 8 and 4a - b = 22

A. 2

B. 4

C. 6

D. 8

E. 10

61. A flagpole is placed at the top of a tower. The angles of elevation of the bottom and top of the flagpole from a point on the ground 10m away are 40° and 50° respectively. Find the length of the flagpole.

A. 1.8m

B. 3.5m

C. 8.4m

D. 11.9m

E. 17.3m

62. Find the length of a diagonal of a square whose area is $288cm^2$.

A. 24cm

B. 48cm

C. 95cm

D. 100cm

E. 124cm

63. Solve for x in the quadratic equation. $2x^2 + 12x + 10 = 0$

A. x = -5, -1

B. x = -5,1

C. x = -3, -2

D. x = 3, 2

E. x = 6, 5

64. For what value(s) of x is the expression $(x^2 + 15x + 50) \div (x - 5)$ not defined

A. -5, -10

B. -10

C. -5

D. 5

E. 10, 5

65. Evaluate log 18 + log6 - log1612

A. log 3

B. log 9

C. log 20

D. 3 log 2

E. 3 log 3

66. A bag contains 4 blue and 8 red identical balls. If two balls are picked at random with replacement, what is the probability of picking two balls of different colours?

A. 1

B. 13/26

C. 5/18

D. 4/9

E. 2/9

67. A car dealer sells a car and makes a profit of 15%. If the car costs N320,000.00, how much did he sell the car?

A. N272,000.00

B. N296,000.00

C. N300,000.00

D. N368,000.00

E. N400,000.00

68. If A(I,2,3,...,10) ; B = (-5,-4,.....,-1) ; C = (-1, 0, 1, 2,....5) List all the elements in (B ∪ C) ∩ A

A. (-1,2,...5)

B. (-1,1,....5)

C. (1,2,..5)

D. (2,3,...10)

E. (1,2,...10)

69. Mohammed is 8 years older than Joy now. In five years' time he will be twice as old as Joy. How old is Joy now?

A. 1^1/2years

B. 3years

C. 4^1/2years

D. 6 years

E. 8 years

70. If (x - a) is a factor of bx - ax + x^2 - ab, what is the other factor?

A. (x + b)

B. (b - a)

C. (x - a)

D. (a + b)

E. (a - b)

71. Simplify (6 - x - x2) ÷ (x2 - 4)

A. (3 + x) ÷ (x + 2)

B. (x - 3) ÷ (x - 2)

C. (x - 3) ÷ (x + 3)

D. (3 - x) ÷ (x + 2)

E. (3 - x) ÷ (x - 2)

72. Find the absolute mean deviation of the sample 10, 12, 14, 11, 13.

A. 14.6

B. 14

C. 12

D. 6.2

E. 1.2

73. In Δ ABC, A = 60°, C = 90° and AC = 12m. Find the Length of the hypotenuse.

A. 24m

B. 14m

C. 12m

D. 7m

E. 6m

74. A bag Contains 2 red, 3 blue and 4 green identical balls. If two balls are picked at random one after the other without replacement, what is the probability that both are green?

A. 1/6

B. 1/3

C. 16/18

D. 3/8

E. 4/9

75. A man is 40m from the foot of a cliff of height 23m. Calculate the angle of elevation of the top of the cliff from the man

A. 50° 54′

B. 35° 06′

C. 30° 00′

D. 290 90′

E. 29° 54′

76. Express the product of 0.007 and 0.057 to two significant figures

A. 0.0004

B. 0.00039

C. 0.004

D. 0.0039

E. 0.04

77. The diagonals of a rhombus are 6cm and 8cm. Find the area of the rhombus.

A. $96cm^2$

B. $48cm^2$

C. $24cm^2$

D. $0.14cm^2$

E. 12cm2

78. Evaluate $ut - 12ft^2$ when t = 5, u = -20 and f = 10

A. 225

B. 72

C. -75

D. -125

E. -225

79. Express the quotient of 0.422 and 0.004 in standard form

A. 1.055×10^2

B. 10.55×10^1

C. 105×10^0

D. 10.55×10^{-1}

E. 1.055×10^{-2}

80. The 4th term of a G.P is 3 and its first term is 81. What is its common ratio?

A. 3

B. 2/3

C. 1/3

D. -1/3

E. -3

81. If the mean of the following set of data, 2, 3,3,3, 2,4, 4, and 3 is divided by its mode, the result is:

A. 1

B. 2

C. 3

D. 5

E. 8

82. The diagonals of a rhombus are 16cm and 30cm long. What is the perimeter of the rhombus

A. 68cm

B. 72cm

C. 80cm

D. 88cm

E. 92cm

83. A bag contains p dozens of bananas and 3q of these proved to be bad. If I buy one third of the goods ones, how many do I get?

A. P -3q

B. 1/3 (p - 3q)

C. 3q

D. 4p - q

E. 12p - 3q

84. If $\log_{10}2 = 0.3010$ and $\log_{10}3 = 0.4771$, simplify: $(\text{Log}_{10}8 - \log_9 2) \div (\text{Log}_{10}9 - \log_{10}2)$

A. 4

B. 3

C. 0.0784

D. -4

E. -0.0784

85. Find the value of t such that the expression 1t + 43 - 56t + 1 is equal to zero

A. 1/6

B. 1/−14

C. – 3/2

D. 7/6

E. 2/5

86. One of the interior angles of a regular polygon is 120°. Find the number of sides of the polygon

A. 3

B. 4

C. 6

D. 9

E. 12

87. If $\cos x = 4/5$, $0° \leq x \leq 90°$, find the value of $(1 + \tan x)/(1 - \tan x)$

A. 9

B. 7

C. 4

D. 7/16

E. 9/25

88. A sales boy gave a change of N75.00 to a buyer instead of N80.00, calculate his percentage error, correct to one decimal place?

A. 6.00%

B. 6.20%

C. 6.30%

D. 6.60%

E. 6.70%

89. Evaluate $(\text{Log}_{13} - \log_5) \div X(\log_5 - \log_{13})$ without using tables

A. X

B. –x

C. X-1

D. $-X^{-1}$

E. -1

90. The roots of a quadratic equation in x, are -m and 2n. Fine equation.

A. $x^2 - x(2n-m) - 2mn = 0$

B. $x^2 + x(2n - m) - 2mn = 0$

C. $x^2 + x(m - 2n) + 2mn = 0$

D. $X^2 + x(m + 2n) + 2mn = 0$

E. $x^2 - x(m - 2n) - 2mn = 0$

91. The bearing of Y from X is 085º. What is the bearing of X from Y?

A. 005°

B. 095°

C. 185°

D. 265°

E. 275°

92. Four pupils have an average age of 12years and two other pupils of average age of 10.5years are added. What is the average age of the six pupils?

A. 10.5yrs.

B. 11yrs.

C. 11.5 yrs.

D. 12yrs.

E. 12.5yrs.

93. Divide the LCM of 15abc and 20a2bc by their HCF

A. 10a

B. 12a

C. 5abc

D. $12a^2bc$

E. $60a^2bc$

94. The first term of an A.P is equal to thrice the common difference, what is the sixth term of the A.P, if the common difference is 8?

A. 64

B. 48

C. 43

D. 24

E. 11

95. Solve the equation: $3[2(x-2)]-2[3(2-x)]=0$

A. 3

B. 2

C. 3/2

D. 2/3

E. -3

96. A car travels at an average speed of 75km/h. Find its speed in metres per second.

A. 270m/s

B. 208m/s

C. 27.0m/s

D. 20.8m/s

E. 2.08m/s

97. If the first term of an AP is 1.2 and the common difference is also 2, what is the mean of the first five terms?

A. 2

B. 4

C. 5

D. 8

E. 10

98. The angle subtended by a diameter of a circle at the circumference is a/an

A. acute angle

B. obtuse angle

C. reflex angle

D. right angle

E. supplementary angle

99. Calculate $(0.05 \times 0.025) \div (4.25 \times 3.35)$ and express your answer in standard form

A. 8.7796×10^{5}

B. 8.7796×10^{4}

C. 8.7796×10^{3}

D. 8.7796×10^{-3}

E. 8.7796×10^{-5}

100. The expression $4x^{2} - 4$ has the following as its factors EXCEPT

A. x - 1

B. x + 1

C. x^2 -1

D. 4x + 1

E. 4x – 4

101. The nth term of a sequence is given as 4×3(3−n). Calculate the third term.

A. 12

B. 32

C. 4

D. 3

E. 1

102. If y varies inversely as x^2, how does x vary with y?

A. x varies inversely as y^2

B. x varies inversely as y√

C. x varies directly as y^2

D. x varies directly as y√

E. x varies directly as y