SENIOR MATHEMATICS QUIZ

1. Find the value of

ANS: 27

2. What name is given to a line or curve that approaches but never touches the (axes) an axis?

ANS: Asymptote

3. Convert radians into degrees.

ANS: 3100

4. Express with a single index and no root sign

ANS: or

5. Find in surd form; cos 450

ANS:

6. Given that - = 2.Find the value of (a – b) if (a + b) =100 expressing your answer in decimal form:

ANS: 0.02

7. If sin A = ,where A is an acute, find cos A in surd form:

ANS: or or

8. What is the coefficient of the fifth term in the expansion of

ANS: 15

9. Find the value of0

ANS: 1

10. Find the value of half of half divided by half

ANS:

11. Differentiate

ANS: -

12. Set A has 14 proper subsets, find its elements

ANS: 4

13. Mulenga is 3 years younger than Bwalya.Bweupe is 2 times older than Bwalya.How old is Bweupe if Mulenga is 20 years old

ANS: 46 years

14. If f(X) = ,x, find the values of x to which f(x) is undefined.

ANS: X =

15. The interior angle of a regular polygon is 360 ,what is the name of this polygon.

ANS: Decagon

16. Find the equation of a straight line which cuts the y-axis at (0,4) and is perpendicular to the line

ANS:

17. Given that. Find

ANS:

18. Find for.

ANS:.

19. Set A has 4 elements, how many subsets does A have?

ANS: 16.

20. Simplify.

ANS: .

21. The mass of a plastic disc is proportional to its area. A disc of area has mass of . If a similar disc has mass of , what is its area?

ANS:

22. Evaluate.

ANS:

23. A 12 sided polygon is …

ANS: Decagon (One attempt only)

24. Find the derivative of .

ANS:

25. Find two numbers whose difference is 4 and whose product is 192.

ANS:

26. What is the minimum value of. If .

ANS: -1

27. What is the derivative of .

ANS:

28. The curve is symmetrical about the line . Find the value of .

ANS: 2

29. What is the absolute value of -11?

ANS: 11

30. If, find the absolute value of

ANS:

31. Find the value of y if the mean of 2,3,4,6 and y is 8

ANS: 25

32. Find the value of 5

ANS: 120

33. Integrate with respect to x.

ANS: Inx

34. What do we call a line which cuts the figure into two parts such that one part overlaps the other?

ANS: Line of symmetry

35. The sum of two consecutive even numbers is 26.Find the two numbers.

ANS: 12 and 14

36. Differentiate

ANS: -

37. How many lines of symmetry has a circle

ANS: infinite

38. Find the mid-most fraction between 0.5 and

ANS:

39. =, find the value of x in the given equation

ANS:

40.If the temperature in Norway at a particular day was -21 and in Sudan was 390.Find the difference in their temperature.

ANS: 500

41. What name is given to a straight line joining two points on the circumference?

ANS: Chord

42. What is the gradient of a line parallel to the y-axis?

ANS: undefined

43. What is the other name given to the numbers in base three?

ANS: Ternary

44. What is the name given to the figure which has exactly same size and same shape?

ANS: Congruent figures

45.What name is given to the set with one element only?

ANS: Singleton

46. Three coins are tossed at the same time. Find the probability of obtaining atleast one head.

ANS:

47. The sets *P* and *Q* are joint sets such that , and how many elements are both in *P* and *Q*?

ANS:

48. Set A has 512 subsets, how many elements does set A have?

ANS: 9

49. Two discs are randomly taken from a bag containing 10 red discs and 6 blue discs in succession without replacement. What is the probability that the discs picked will be blue?

ANS:

50. How many prime numbers are there between 50 and 60?

ANS: 4

51. In how many ways can the word PARALLEL be arranged?

ANS: 3360

52. Given that, , and . Find

ANS:

53. The probability of snow falling on Christmas day is. What is the probability that snow will fall on the next three Christmas days?

ANS: or

54. Given that,,. List members of .

ANS:

55. When all three sides of a triangle are trebled in length, the area is increased by a factor of….

ANS: 9

56. What are the coordinates of the point after reflection in the line

ANS:

57. The mean of four numbers is 12. The mean of three numbers is 13. What is the fourth number?

ANS: 9

58. The larger angle between South-West and East is….

ANS:

59. A rectangle 8cm by 6cm is inscribed inside a circle. What is the area of the circle in terms of ?

ANS:

60. The perimeter of a square is 36cm, what is its area?

ANS:

61. A man is paid per week after a pay rise of . What was he paid before?

ANS:

62. How many cubes of edge 3cm are needed to fill a box with internal dimensions 12cm by 6cm?

ANS: 16

63. A pencil is lowered into a measuring cylinder of radius 4cm and height 6 cm diagonally. Find the length of the pencil if it is lowered up to the brim of the cylinder?

ANS: 10cm

64. A triangle has sides of lengths , and what is its area?

ANS:

65. In how many ways can the word HOCKEY be arranged?

ANS: 720

66. Given that and , the value of is …

ANS: 15

67. Which number is 12.5% more than 800?

ANS: 900

68. Convert into .

ANS: .

69. Find the cosine of .

ANS: -0.5 or

70. The reciprocal of is . What is the value of value of ?

ANS: 2

71. Describe the locus of the points 6cm from a fixed point.

ANS: Circle of radius 6cm.

72. The position vectors of A and B are 2i – j and -7i respectively. Find vector

ANS: - 9i + j

73. Simplify – i

ANS: or or or -2.5i or -2i

74. What is the coefficient of x in

ANS:

75. Find the fraction between and

ANS: or 1

76. Solve for **a** given that = 5 – 6a

ANS: or 0.8 or

77. The equation of a straight line is given by 3x – 5y + 8 = 0.What is its gradient?

ANS: or 0.6

78. Express - as a single fraction

ANS:

79. Given that = 8, find the value of x.

ANS: 4

80. Set p has 64 subsets, find the number of its elements.

ANS: 6

81. Set X has 5 elements, How many proper subsets does it have?

ANS: 30

82. A bag contains five red marbles. A red marble is picked and not replaced. What is the probability of picking an orange marble on the second pick?

ANS: or or 0.6

83. What is the integral of?

ANS: 3Inx or In

84. What is the second derivative of

ANS: 4x

85. Write down the square root of .

ANS:

86. The highest air temperature recorded is . The lowest air temperature recorded is . What is the difference between these two temperatures?

ANS:

87. When peter went to Hong Kong, he changed to . Calculate what one British pound was worth in dollars ($) in Hong Kong.

ANS: $12.32

88. The rate pay is $14.50 per hour. How much did Mwansa earn on day 6?

ANS: $2088

89. Calculate the value of

ANS: 4

90. The reciprocal of is. What is the value of

ANS: 3

91. The distance of Saturn from the Sun is 1507million kilometers. Express 1507million in standard form.

ANS:

92. A car decelerates uniformly from 20m/s to 5m/s in 25seconds. Calculate the retardation.

ANS:

93. Find the fraction which is exactly halfway between and

ANS:

94. In a school JETS election, John received 220 votes. This was 55% of the total number of votes. Find the total number of votes.

ANS: 400 votes.

95. Solve the equation

ANS: x=2

96. Simplify

ANS:

97. Given that, express x in terms of y.

ANS:

98. Given that , express g in terms of , T and L.

ANS:

99. T varies inversely as V.Given that the constant of proportionality is 30, find the value of V when T = 60.

ANS: 0.5 or

100. On a particular day in Muchinga province, the temperature was -130c.After eight hours, the temperature increased to 90c.What is the increase in temperature?

ANS:220C.