

1. Which of the following values is NOT equal to $34(58+9)$?

- A. 34×67
- B. $58(34+9)$
- C. $34 \times 58 + 34 \times 9$
- D. $1,972 + 306$

2. If 5 ounces is equal to 140 grams, then 2 pounds of ground meat is equal to how many grams?

- A. 863
- B. 878
- C. 896
- D. 915

3. Which of the following is equal to 5.93×10^{-2} ?

- A. 0.0593
- B. 0.00593
- C. 593
- D. 5930

4. On a Map, 1 inch represents 20 miles. The distance between 2 towns is $6\frac{1}{5}$ inches. How many miles are actually between the two towns?

- A. 65 miles
- B. 84 miles
- C. 124 miles
- D. 138 miles

5. Sarah is twice as old as her youngest brother. If the difference between their ages is 15 years, how old is her youngest brother?

- A. 10
- B. 15
- C. 20
- D. 25

6. Which of the following fractions is equal to $\frac{5}{6}$?

- A. $\frac{20}{30}$
- B. $\frac{15}{24}$
- C. $\frac{25}{30}$
- D. $\frac{40}{54}$

7. The number of milliliters in 1 liter is:

- A. 10,000
- B. 1,000
- C. 0.1
- D. 0.01

8. What is $\frac{1}{9}$ of 9?

- A. $\frac{1}{9}$
- B. 0
- C. 1
- D. 2

9. In his pocket, a boy has 3 red marbles, 4 blue marbles, and 4 green marbles. How many will he have to take out of his pocket to ensure that he has taken out at least one of each color?

- A. 11
- B. 7
- C. 8
- D. 9

10. Saleem can type a 20 page document in 40 minutes, Aysha can type it in 30 minutes, and Raheel can type it in 24 minutes. Working together, how much time will it take them to type the same document?

- A. 5 minutes
- B. 10 minutes
- C. 18 minutes
- D. 20 minutes

11. Which of the following fractions is less than $\frac{2}{3}$?

- A. $\frac{7}{8}$
- B. $\frac{5}{6}$
- C. $\frac{3}{4}$
- D. $\frac{3}{5}$

12. A hockey team won 6 games and lost 8. What is the ratio of wins to number of games?

- A. $\frac{6}{8}$
- B. $\frac{8}{6}$

- C. $\frac{3}{7}$
- D. $\frac{8}{14}$

13) $6.334 \times 10^4 =$

- A. 0.0006334
- B. 0.06334
- C. 6334
- D. 63340

14. The average of three numbers is V . If one of the numbers is Z and another is Y , what is the remaining number?

- A. $ZY - V$
- B. $\frac{Z}{V} - 3 - Y$
- C. $\frac{Z}{3} - V - Y$
- D. $3V - Z - Y$

15. Jamil can fill a pool carrying buckets of water in 30 minutes. Ali can do the same job in 45 minutes. Tariq can do the same job in $1\frac{1}{2}$ hours. How quickly can all three fill the pool together?

- A. 12 minutes
- B. 15 minutes
- C. 21 minutes
- D. 23 minutes

16. What simple interest rate will Raheel need to secure to make Rs. 2,500 in interest on a Rs. 10,000 principal over 5 years?

- A. 4%
- B. 5 %
- C. 6%
- D. 7%

17. Given: $a = i + j + k$, $a \cdot b = 1$ and $a \times b = j - k$. Then, b is equal to

- A. $-2i$
- B. $2i + k$
- C. $3j$
- D. i

18. Consider points A , B , C and D with position vectors $7i - 4j + 7k$, $i - 6j + 10k$, $-i + 3j + 4k$ and $5i - j + 5k$ respectively. Then ABCD is a

- A. rhombus
- B. rectangle
- C. parallelogram but not a rhombus
- D. none

19. The value of a number is five times the sum of its digits. Find the number.

- A. 35
- B. 45
- C. 55
- D. 65

20. What is the equivalent of 110 in Roman numerals?

- A. XC
- B. CX
- C. LX
- D. DX

21. $2 + \{4 + (8 - 5 - 3)\} = ?$

- A. 6
- B. 16
- C. 12
- D. 7

22. $5*2$ is a three digit number with * as a missing digit. If the number is divisible by 6, the missing digit is?

- A. 2
- B. 3
- C. 6
- D. 7

23. If Rank of a matrix is equal to No. of variable then it have

- A. Non-Trivial solution , $x = y = z \neq 0$
- B. Trivial Solution , $x = y = z = 0$
- C. $x = y = 0$, $z \neq 0$
- D. None

24. LCM of 10,16 and 25=?

- A. 400
- B. 200
- C. 20
- D. 160

25. If the value of x lies between 0 & 1 which of the following is the largest?

- A. x
- B. x^2
- C. $-x$
- D. $1/x$

26. If 42 men can do a work in 15 days, how many men are required to complete it in 21 days?

- A. (a) 24
- B. (b) 36
- C. (c) 30
- D. (d) none of these

27. The sum of all possible two digit number formed from three different one digit natural number when divided by the sum of the original three number is equal to:?

- A. 18
- B. 22
- C. 36
- D. none of these

28. In the first 10 over of a cricket game, the run rate was only 3.2 What should be the run rate in the remaining 40 over to reach the target of 282 run?

- A. 6.25
- B. 6.5
- C. 6.75
- D. 7

29. There are four prime no written in ascending order. The product of the first three is 385 and that of the last three is 1001. The last no is?

- A. 11
- B. 13
- C. 17
- D. 19

30. What is $\frac{1}{3}$ of the difference of 90 and 36/

- A. 10
- B. 18
- C. 15
- D. 14

31. You are having 31kg of rice. You are provided with a 1kg stone for weighing. In how many weights the 31kg of rice can be weighed.

- A. 6
- B. 34
- C. 63
- D. 5

32. L.C.M & H.C.F. The L.C.M. (Lowest (or Least) Common Multiple) of two numbers is 45 times to their H.C.F (Highest Common Factor). If one of the numbers is 125 and sum of L.C.M. and H.C.F. is 1150, the other number is:

- A. 215
- B. 220
- C. 225
- D. 235

33. The cost of an item is Rs 12.60. If the profit is 10% over selling price what is the selling price?

- A. 10.86
- B. 18.56
- C. 15.86
- D. 13.86

34. If we write all the whole no from 200 and 400, then how many of these contain the digit 7 once and only once.

- A. 32

- B. 34
- C. 35
- D. 36

35) The sum of the three prime no is 100.If one of them exceed another by 36, then one of them?

- A. 7
- B. 29
- C. 41
- D. 67

36. In the numerals 0 to 99 which is the least repeated digit?

- A. 9
- B. 1
- C. 0
- D. 7

37. When a number is divided by 13, the remainder is 11.When the same number is divided by 17; the remainder by 9.What is the number?

- A. 339
- B. 349
- C. 369
- D. data inadequate

38. If two set have no element common, they are called

- A. Disjoint sets
- B. Overlapping sets
- C. Complementary sets
- D. Equivalent sets

39. $\{2,3,5,7,11, \dots\}$ represent the first five

- A. Positive odd number
- B. Odd natural number
- C. Prime number
- D. Positive even number

40. Thirty men take 20 days to complete a job working 9 hours a day. How many hours a day should 40 men work to complete the job?

- A. 8 hrs
- B. 7.5 hrs
- C. 7 hrs
- D. 9 hrs

41. Six bells commence tolling together and toll at intervals 2,4,6,8,10 and 12 seconds respectively. In 30 minutes how many times they toll together.

- A. 4
- B. 10
- C. 15
- C. 16

42. The mean of a binomial distribution is 3 and its variance is $\frac{3}{2}$. Then the number of trials is?

- A. 6
- B. 2
- C. 3
- D. 5

43. There are 12 yes or no questions. How many ways can these are answered?

- A. 1024
- B. 2048
- C. 4096
- D. 144

44. A 4 cm cube is cut into 1 cm cubes. What is the percentage increase in the surface area after such cutting?

- A. 4%
- B. 300%
- C. 75%
- D. 400%

45. Simple and compound interest at what rate percent compound interest does sum .of money became four fold in 2 yrs?

- A. 25%
- B. 50%
- C. 100%
- D. 10%

46. A man loses 20% of his money and after spending 70% of the remainder he is left with Rs. 270. Originally he had:

- A. Rs. 1125
- B. Rs. 1225
- C. Rs. 1325
- D. Rs. 1500

47. If $x\%$ of an hour is 2 minutes, x is equal to:

- A. $3\frac{1}{3}\%$
- B. $2\frac{3}{4}\%$
- C. $3\frac{2}{3}\%$
- D. $4\frac{7}{8}\%$

48. A number is increased by 10% and then reduced by 10%, then the number :

- A. Doesn't change
- B. decreases by 1%
- C. increases by 1%
- D. none of these

49. Nasir salary was reduced by 25%. Percentage increase to be effected to bring the salary to the original level is:

- A. 20%
- B. 25%
- C. $33\frac{1}{3}\%$
- D. 30%

50. If x and y are positive integer such that $(3x+7y)$ is a multiple of 11, then which of the following will also be divisible by 11?

- A. $4x+6y$
- B. $x+y+4$
- C. $9x+4y$
- D. $4x-9y$

51. What is the product of the irrational roots of the equation $(2x-1)(2x-3)(2x-5)(2x-7)=9$?

- A. $\frac{3}{2}$

- B. 4
- C. 3
- D. $\frac{3}{4}$

52. If $x : y = 3 : 4$, then $(2x+3y) : (3y-2x) =$

- A. 2:1
- B. 4:1
- C. 3:2
- D. 3:1

53. The present ages of three persons are in proportions 4 : 7 : 9. Eight years ago, the sum of their ages was 56. Find their present ages (in years)

- A. 20, 35, 45
- B. 8, 20, 28
- C. 16, 28, 36
- D. 20, 36, 46

54. Which of the following is not a rational number?

- A. -4
- B. $\frac{1}{5}$
- C. 0.8333333.....
- D. $\sqrt{2}$

55. Jamil is traveling to a meeting that is 28 miles away. He needs to be there in 30 minutes. How fast does he need to go to make it to the meeting on time?

- A. 56 mph
- B. 37 mph
- C. 41 mph
- D. 49 mph

56. If Saleem can mix 20 drinks in 5 minutes, Sue can mix 20 drinks in 10 minutes, and Jack can mix 20 drinks in 15 minutes, how much time will it take all 3 of them working together to mix the 20 drinks?

- A. 2 minutes and 44 seconds
- B. 2 minutes and 58 seconds
- C. 3 minutes and 10 seconds
- D. 3 minutes and 26 seconds

57. If Sami can do a job in 4 days that Ali can do in 6 days and Tariq can do in 2 days, how long would the job take if Sami, Ali and Tariq worked together to complete it?

- A. 0.8 days
- B. 1.09 days
- C. 1.23 days
- D. 1.65 days

58. During a 5-day festival, the number of visitors tripled each day. If the festival opened on a Thursday with 345 visitors, what was the attendance on that Sunday?

- A. 9,315
- B. 1,035
- C. 1,725
- D. 3,105

59. Type a page in p minutes, what piece of the page can she do in 5 minutes?

- A. $5/p$
- B. $p - 5$
- C. $p + 5$
- D. $p/5$

60. If Kamran can paint a house in 4 hours, and Imran can paint the same house in 6 hour, how long will it take for both of them to paint the house together?

- A. 2 hours and 24 minutes
- B. 3 hours and 12 minutes
- C. 3 hours and 44 minutes
- D. 4 hours and 10 minutes

61. If Leah is 6 years older than Saleem and Jamil is 5 years older than Leah, and the total of their ages is 41. Then how old is Sue?

- A. 8
- B. 10
- C. 14
- D. 19

62. Fazil has 16 jellybeans in her pocket. She has 8 red ones, 4 green ones, and 4 blue ones. What is the minimum number of jellybeans she must take out of her pocket to ensure that she has one of each color?

- A. 4
- B. 8
- C. 12
- D. 13

63. If 300 jellybeans cost you x dollars. How many jellybeans can you purchase for 50 cents at the same rate?

- A. $150/x$
- B. $150x$
- C. $6x$
- D. $1500/x$

64. $7 \frac{1}{2} - 5 \frac{3}{8} =$

- A. $1 \frac{1}{2}$
- B. $1 \frac{2}{3}$
- C. $2 \frac{1}{8}$
- D. $3 \frac{1}{4}$

65. You need $\frac{4}{5}$ cups of water for a recipe. You accidentally put $\frac{1}{3}$ cups into the mixing bowl with the dry ingredients. How much more water in cups do you need to add?

- A. $\frac{1}{3}$ cups
- B. $\frac{2}{3}$ cups
- C. $\frac{1}{15}$ cups
- D. $\frac{7}{15}$ cups

66. Which of these numbers is a factor of 21

- A. 2
- B. 5
- C. 7
- D. 42

67. If the average person drinks 8, (8oz) glasses of water per day, a person who drinks 12.8 oz of water after a morning exercise session has consumed what fraction of the daily average?

- A. $\frac{1}{3}$
- B. $\frac{1}{5}$
- C. $\frac{1}{7}$
- D. $\frac{1}{9}$

68. There are 8 ounces in a $\frac{1}{2}$ pound. How many ounces are in $7\frac{3}{4}$ lbs?

- A. 12 ounces
- B. 86 ounces
- C. 119 ounces
- D. 124 ounces

69. Solve: $0.25 + 0.65$

- A. $\frac{1}{2}$
- B. $\frac{9}{10}$
- C. $\frac{4}{7}$
- D. $\frac{2}{9}$

70. Multiply 10^4 by 10^2

- A. 10^8
- B. 10^2
- C. 10^6
- D. 10^{-2}

71. Find 8.23×10^9

- A. 0.00000000823
- B. 0.000000823
- C. 8.23

D. 8230000000

72) 83,000 is equals to:

A. 83.0×10^4

B. 8.3×10^4

C. 8.3×10^3

D. 83.0×10^5

73) 0.00875 equals:

- A. 8.75×10^{-2}
- B. 8.75×10^{-3}
- C. 8.75×10^{-4}
- D. 87.5×10^{-3}

74. What is the mathematical average of the number of weeks in a year, seasons in a year, and the number of days in January?

- A. 29
- B. 33
- C. 32
- D. 31

75. What is the median of the following list of numbers? 4, 5, 7, 9, 10, 12

- A. 6
- B. 7.5
- C. 7.8
- D. 8

76. What is the absolute value of -9?

- A. -9
- B. 9
- C. 0
- D. -1

77. Subtract the following numbers rounded to the nearest tenths place.
134.679, -45.548, -67.8807

- A. 21.3
- B. 21.25
- C. -58.97
- D. -59.0

78. What are 1230.932567 rounded to the nearest hundredths place?

- A. 1200
- B. 1230.9326
- C. 1230.93
- D. 1230

79. Round 907.457 to the nearest tens place.

- A. 908.0
- B. 910
- C. 907.5
- D. 900

80. If Sajid needs $2\frac{1}{2}$ pints of cream to make a dessert. How many pints will he need to make 3 desserts?

- A. $2\frac{1}{2}$
- B. 3
- C. 4
- D. $7\frac{1}{2}$

81. If a $\frac{1}{4}$ of a teaspoon is 1 ml, then how many milliliters are in 6 teaspoons?

- A. 10 ml
- B. 12.5 ml
- C. 20 ml
- D. 24 ml

82. Which of the following fractions are correctly placed from the least in value to the greatest in value?

- A. $\frac{1}{4}$, $\frac{17}{25}$, $\frac{3}{4}$, $\frac{11}{16}$
- B. $\frac{17}{25}$, $\frac{1}{4}$, $\frac{11}{16}$, $\frac{3}{4}$
- C. $\frac{1}{4}$, $\frac{17}{25}$, $\frac{11}{16}$, $\frac{3}{4}$
- D. $\frac{1}{4}$, $\frac{17}{25}$, $\frac{3}{4}$, $\frac{11}{16}$

83. What is the mathematical average of the number of days in a typical year, the number of days in a week, and the number of hours in a day?

- A. 100
- B. 115
- C. 132
- D. 158

84) $1.75 \times 10^5 =$

- A. 175,000
- B. 17,500
- C. 1,750
- D. 0.00175

85. 85% of what number is 136?

- A. 160
- B. 170
- C. 180
- D. 190

86. A building that is 150 ft tall casts a shadow of 20 feet long. At the same time a tree casts a shadow of 2 ft. How tall is the tree?

- A. 10
- B. 15
- C. 20
- D. 25

87. What is the fractional equivalent of 12.5%?

- A. $\frac{1}{4}$
- B. $\frac{2}{9}$
- C. $\frac{1}{5}$
- D. $\frac{1}{8}$

88. Change $4 \frac{3}{5}$ to an improper fraction.

- A. $\frac{23}{5}$
- B. $\frac{7}{5}$
- C. $\frac{12}{20}$
- D. $\frac{20}{12}$

89. Bilal started a race at 6:30 A.M., and he did not cross the finish line until 1:05 P.M. How long did it take for Brett to finish the race?

- A. 6 hours and 15 minutes
- B. 6 hours and 35 minutes
- C. 7 hours and 5 minutes
- D. 7 hours and 15 minutes

90. Multiply 2.345×0.023

- A. 0.53935
- B. 0.053935
- C. 0.0053935
- D. 10.195652

91. A men's basketball team won 24 games and lost 32. What is the ratio of games lost to the number of games played?

- A. 32:24
- B. 4:3
- C. 3:4
- D. 4:7

92. Which of the following choices is equivalent to $\frac{5}{6}$?

- A. $\frac{5}{12}$
- B. $\frac{10}{6}$
- C. $\frac{20}{30}$
- D. $\frac{15}{18}$

93. If one side of a square is 5 units, what is the area of the square?

- A. 10
- B. 15
- C. 20
- D. 25

94. If the average arithmetic mean of 8, 12, 15, 21, x and 11 is 17 then what is x ?

- A. 3
- B. 15
- C. 17
- D. 35

95. Which of the following has the least value?

- A. 0.27
- B. $\frac{1}{4}$
- C. $\frac{3}{8}$
- D. 11%

96. If $8x + 5x + 2x + 4x = 114$, the $5x + 3 =$

- A. 12
- B. 25
- C. 33
- D. 47

97. If 6 is 24% of a number, what is 40% of the same number?

- A. 8
- B. 10
- C. 15
- D. 20

98. If a match box is 0.17 feet long, what is its length in inches the most closely comparable to the following?

- A. $5 \frac{1}{16}$ inch highlighter
- B. $3 \frac{1}{8}$ inch jewelry box
- C. $2 \frac{3}{4}$ inch lipstick
- D. $2 \frac{3}{16}$ inch staple remover

99. Which of the following units which would be more likely used to measure the amount of water in a bathtub?

- A. kilograms
- B. liters
- C. milliliters
- D. centigrams

100. At a company fish fry, $\frac{1}{2}$ in attendance is employees. Employees spouses are $\frac{1}{3}$ of the attendance. What is the percentage of the people in attendance who are not employees or employee spouses?

- A. 10.5%
- B. 16.7%
- C. 25%
- D. 32.3%

101. If 300 jellybeans cost you x Rupees. How many jellybeans can you purchase for 50 Paisa at the same rate?

- A. $150/x$
- B. $150x$
- C. $6x$
- D. $x/6$

102. The conjugate of a complex number is $1/i-1$. Then the complex number is

- (a) $-1/i-1$
- (b) $1/i+1$
- (c) $1/i-1$
- (d) $-1/i+1$

103. The mean of the numbers $a, b, 8, 5, 10$ is 6 and the variance is 6.80. Then which one of the following gives possible values of a and b ?

- A. $a = 0, b = 7$
- B. $a = 5, b = 2$
- C. $a = 3, b = 4$
- D. $a = 2, b = 4$

104. The line passing through the points $(5, 1, a)$ and $(3, b, 1)$ crosses the yz -plane at the point $(0, 17/2, -13/2)$ Then

- A. $a = 2, b = 8$
- B. $a = 4, b = 6$
- C. $a = 6, b = 4$
- D. $a = 8, b = 2$

105. If $9x-3y=12$ and $3x-5y=7$ then $6x-2y = ?$

- A. -5
- B. 4
- C. 2
- D. 8

106. If the sum of the roots of the quadratic equation $ax^2 + bx + c = 0$ is equal to the sum of the squares of their reciprocals, then a/c , b/a , and c/b are in

- A. arithmetic progression
- B. geometric progression
- C. harmonic progression
- D. arithmetic-geometric progression

107. A student is to answer 10 out of 13 questions in an examination such that he must choose at least 4 from the first 5 questions. The number of choices available to him is

- A. 140
- B. 196
- C. 280
- D. 346

108. The number of ways in which 6 men and 5 women can dine at a round table if no two women are to sit together is given by

- A. $6! * 5!$
- B. 50
- C. $5! * 4!$
- D. $7! * 5!$

109. Let $f(x)$ be a polynomial function of second degree. If $f(1) = f(-1)$ and a, b, c are in A. P., then $f'(a)$, $f'(b)$ and $f'(c)$ are in

- A. A.P.
- B. G.P.
- C. H. P.
- D. arithmetic-geometric progression

110. Five horses are in a race. Mr. A selects two of the horses at random and bets on them. The probability that Mr. A selected the winning horse is

- A. $4/5$
- B. $3/5$
- C. $1/5$
- D. $2/5$

111. How many ways are there to arrange the letters in the word GARDEN with the vowels in alphabetical order?

- A. 120
- B. 480
- C. 360
- D. 240

112. Two angles of a triangle measure 15° and 85° . What is the measure for the third angle?

- A. 50°
- B. 55°
- C. 60°
- D. 80°

113. Two angles in a triangle equal 120° . What is the measure of the third angle?

- A. 60°
- B. 70°
- C. 80°
- D. 90°

114. The radius of the in circle of a triangle whose sides are 18,24,30 is ?

- A. 2
- B. 4
- C. 6
- D. 9

115. What is the value of each angle of an equilateral triangle?

- A. 60 degree
- B. 90 degree
- C. 120 degree
- D. 180 degree

116. If a circle has the diameter of 8, what is the circumference?

- A. 6.28
- B. 12.56
- C. 25.13
- D. 50.24

117. Two angles of a triangle equal 140° . What is the measure of the third angle in degrees?

- A. 40°
- B. 80°
- C. 100°
- D. 120°

118. In triangle ABC, $AB=BC$ and (C's measure is 65° .) What is the measure of angle B?

- A. 40°
- B. 50°
- C. 60°
- D. 65°

119. Let $R = \{(1, 3), (4, 2), (2, 4), (2, 3), (3, 1)\}$ be a relation on the set $A = \{1, 2, 3, 4\}$. The relation R is

- A. a function
- B. reflexive
- C. not symmetric
- D. transitive

120. If $y(x-1) = z$ then $x =$

- A. $y-z$
- B. $z/y + 1$
- C. $y(z-1)$
- D. $z(y-1)$

121. If $3x=6x-15$ then $x + 8 =$

- A. 13
- B. 10
- C. 11
- D. 12

122. If $3x + 5x = -8$, then $x + 1 =$

- A. -2
- B. -1
- C. 0
- D. 1

123. If $8x + 5x + 2x + 4x = 114$, the $5x + 3 =$

- A. 12
- B. 25
- C. 33
- D. 47

124. If $y = 3$, then $y^3(y^3 - y) =$

- A. 300
- B. 459
- C. 648
- D. 999

125. If $r = 5z$ then $15z = 3y$, then $r =$

- A. y
- B. $2y$
- C. $5y$
- D. $10y$

126. Divide x^5 by x^2

- A. x^7
- B. x^4
- C. x^{10}
- D. x^3

127. If $8x + 5 = 21$, then $3x + 4 =$

- A. 2
- B. 5
- C. 10
- D. 16

128. Find the remainder when the polynomial $x^4 - 3x^2 + 7x - 10$ is divided by $x - 2$.

- A. 8
- B. -20
- C. 18
- D. 0

129. If one of the roots of the quadratic equation $2x^2 - 7x + q = 0$ is 3, then find the other root.

- A. -3
- B. $-1/2$
- C. $1/2$
- D. $1/4$

130. If p and q are the roots of the equation $x^2 - bx + c = 0$, then what is the equation if the roots are $(pq + p + q)$ and $(pq - p - q)$?

- A. $x^2 - 2cx + (c^2 - b^2) = 0$
- B. $x^2 - 2bx + (b^2 + c^2) = 0$
- C. $Bcx^2 - 2(b+c)x + c^2 = 0$
- D. $x^2 + 2bx - (c^2 - b^2) = 0$

131. If $(x + 2)^2 = 9$ and $(y + 3)^2 = 25$, then the maximum value of x / y is.

- A. $1 / 2$
- B. $5 / 2$
- C. $5 / 8$
- D. $1 / 8$

132. The area of the plane region bounded by the curves $x + 2y^2 = 0$ and $x + 3y^2 = 1$ is equal to

- A. $3/5$
- B. $4/3$
- C. $7/3$
- D. 1

133. The real number x when added to its inverse gives the minimum value of the sum at x equal to

- A. 2
- B. 1
- C. - 1
- D. - 2

134. Let two numbers have arithmetic mean 9 and geometric mean 4. Then these numbers are the roots of the quadratic equation

- A. $x^2 + 18x + 16 = 0$
- B. $x^2 - 18x - 16 = 0$
- C. $x^2 + 18x - 16 = 0$
- D. $x^2 - 18x + 16 = 0$

135. Consider the series: 8.9, 4.45, 2.225, _____ what come next?

- A. 0.55625
- B. 2. 1.9678
- C. 1.1125
- D. 0.5432

136. Consider the series: 9, 24, 39, 54, 69, 84, 99, 114, _____ what come next?

- A. 129
- B. 124
- C. 128
- D. 130

137. Consider the series: 68, 81, x, 113, 132, find the value of x?

- A. 98
- B. 86
- C. 96
- D. None of these.

138. Consider the series: 27, 24, 20, 15, 9, 2, _____ what come next?

- A. 0.5
- B. -6
- C. -1
- D. 0

139. Consider the series: 3, 8, 27, 112, 565, _____ what comes next?

- A. 2240
- B. 2156
- C. 1656
- D. 3396

140. Consider the series: 3, 4, 6, 9, 13, ____ what comes next?

- A. 15
- B. 16
- C. 17
- 4. 18

141. If the range of the set of numbers {150, 90, 125, 110, 170, 155, x, 100, 140} is 95, which of the following could be x?

- 1. 80
- 2. 85
- 3. 95
- 4. 185

142. Consider the series: 80, 40, 20, 10, 5, $5/2$, ____ what comes next?

- 1. $1/2$
- 2. 2
- 3. $5/4$
- 4. None of above

143. Find the missing term in the following sequence: 4, 9, 19, __, 79

- A. 40
- B. 37
- C. 38
- D. 39

144. What is the next number in the following pattern? 1, $1/2$, $1/4$, $1/8$, ____

- A. $1/10$
- B. $1/12$
- C. $1/14$
- D. $1/16$

145. If $2a + 3b + 6c = 0$, then at least one root of the equation $ax^2 + bx + c$ lies in the interval

- A. (0, 1)

- B. (1, 2)
- C. (2, 3)
- D. (1, 3)

146. If $x \frac{dy}{dx} = y (\log y - \log x + 1)$, then the solution of the equation is

- A. $y \log(x/y) = cx$
- B. $x \log(y/x) = cy$
- C. $\log(y/x) = cx$
- D. $\log(x/y) = cy$

147. $\int \cos x$

- A. $\tan x$
- B. $\sec x$
- C. $\sin x$
- D. $-\sin x$

148. A circle touches the x-axis and also touches the circle with centre at (0, 3) and radius 2. The locus of the centre of the circle is

- A. an ellipse
- B. a circle
- C. a hyperbola
- D. a parabola

149. A straight line through the point A(3, 4) is such that its intercept between the axes is bisected at A. Its equation is

- A. $x + y = 7$
- B. $3x - 4y + 7 = 0$
- C. $4x + 3y = 24$
- D. $3x + 4y = 25$

150. In an ellipse, the distance between its foci is 6 and minor axis is 8. Then its eccentricity is

- A. $3/5$
- B. $1/2$
- C. $4/5$
- D. 7

151. The function $f(x) = x/2 + 2/x$ has a local minimum at

- A. $x = 2$
- B. $x = -2$
- C. $x = 0$
- D. $x = 1$

152. Differentiation of $\log x \cdot \sin x$

- A. $\sin x \cdot 1/x$
- B. $\cos x \cdot \sin x + \log x$
- C. $\sin x \cdot 1/x + \log x \cdot \cos x$
- D. $\cos x \cdot (-1/x) + 1/\log x$

153. $y = \sin x$ then evaluate $dy/dx = ?$ then what is Integration of ?

- A. $\sin x$
- B. $\cos x$
- C. $-\sin x$
- D. $-\cos x$

154. What is the value of factorial Zero (0!)

- A. 10
- B. 0
- C. 1
- D. -1

155. $y = \sin x + \cos x - 5a$ what is dy/dx

- A. $\cos x - \sin x$
- B. $\cos x + \sin x - 5$
- C. $\sin x - \sec x$
- D. $\sin x + \cos x + 5$

156. The point diametrically opposite to the point P (1, 0) on the circle $x^2 + y^2 + 2x + 4y - 3 = 0$ is

- A. $(-3, -4)$
- B. $(-3, 4)$
- C. $(3, 4)$
- D. $(-4, -1)$

157. The mean of the numbers a, b, 8, 5, 10 is 6 and the variance is 6.80.

Then which one of the following gives possible values of a and b?

- A. $a = 0, b = 7$
- B. $a = 5, b = 2$
- C. $a = 3, b = 4$
- D. $a = 2, b = 4$

158. The line passing through the points $(5, 1, a)$ and $(3, b, 1)$ crosses the yz -plane at the point $(0, 17/2, -13/2)$ Then

- A. $a = 2, b = 8$
- B. $a = 4, b = 6$
- C. $a = 6, b = 4$
- D. $a = 8, b = 2$

159. Turn odd man out: 2,5,10,17,26,37,50,64

- A. 2
- B. 10
- C. 64
- D. 50

160. The graph of the function $y = f(x)$ is symmetrical about the line $x = 2$, then

- A. $f(x + 2) = f(x - 2)$
- B. $f(2 + x) = f(2 - x)$
- C. $f(x) = f(-x)$
- D. $f(x) = -f(-x)$

161. If $2a + 3b + 6c = 0$, then at least one root of the equation $ax^2 + bx + c$ lies in the interval

- A. $(0, 1)$
- B. $(1, 2)$
- C. $(2, 3)$
- D. $(1, 3)$

162. The area of the region bounded by the curves $y = |x - 2|$, $x = 1$, $x = 3$ and the x -axis is

- A. 1
- B. 2

C. 3

D. 4

163. Distance between two parallel planes $2x + y + 2z = 8$ and $4x + 2y + 4z + 5 = 0$ is

A. $3/2$

B. $5/2$

C. $7/2$

D. $9/2$

164. The probability that A speaks truth is $\frac{3}{5}$, while this probability for B is $\frac{4}{5}$. The probability that they contradict each other when asked to speak on a fact is

A. $3/20$

B. $1/5$

C. $7/20$

D. $4/5$

165. The mean and the variance of a binomial distribution are 4 and 2 respectively. Then the probability of 2 successes is

A. $37/256$

B. $219/256$

C. $128/256$

D. $28/256$

167. If $A^2 - A + I = 0$, then the inverse of A is

A. $A + I$

B. A

C. $A - I$

D. $I - A$

168. If in a frequently distribution, the mean and median are 21 and 22 respectively, then its mode is approximately

A. 22.0

B. 20.5

C. 25.5

D. 24.0

169. If in a triangle ABC, the altitudes from the vertices A, B, C on opposite sides are in H.P., then $\sin A$, $\sin B$, $\sin C$ are in

- A. G.P.
- B. A.P.
- C. Arithmetic – Geometric Progression
- D. H.P.

170. A circle touches the x-axis and also touches the circle with centre at (0, 3) and radius 2. The locus of the centre of the circle is

- A. an ellipse
- B. a circle
- C. a hyperbola
- D. a parabola

171. A particle has two velocities of equal magnitude inclined to each other at an angle θ . If one of them is halved, the angle between the other and the original resultant velocity is bisected by the new resultant. Then θ is

- A. 90°
- B. 120°
- C. 45°
- D. 60°

172. A Null vector is denoted by

- A. A
- B. i
- C. j
- D. O

173. The magnitude of vector $[a, b]$ is

- A. $a^2 + b^2$
- B. $(a + b)^2$
- C. $a^2 + b^2$

D. $a + b$

174. Two vector are called equivalent vector if they have _____

- A. Same magnitude
- B. Same direction
- C. Same magnitude and direction
- D. Same magnitude and opposite direction

175. If $A(-2, -3)$ and $B(8, -2)$ are two points and O is the origin, then

$$\vec{OA} + \vec{OB} =$$

- A. $[6, 5]$
- B. $[6, -5]$
- C. $[10, 5]$
- D. $[-16, 6]$

176. $A = \{0, 1, 2, 3, \dots\}$ is the set of

- A. Prime number
- B. Whole number
- C. Irrational number
- D. Rational number

177. The union of set A and B is expressed as

- A. $A \cup B$
- B. $A \cap B$
- C. $A \times B$
- D. $A - B$

178. If a relation is given by $R = \{(0, 1), (1, 2), (3, 4)\}$, then the Range of r is

- A. $\{0, 1, 3\}$
- B. $\{1, 2, 3\}$
- C. $\{2, 3, 4\}$
- D. $\{1, 2, 4\}$

179. If $A = \{1,2,3\}$ and $R = \{(1, 2), (2,3), (3,3)\}$, then the R is

- A. A function from A onto A
- B. Not a function
- C. A function from A into A
- D. Not a binary relation

180. On the y-axis, the x coordinate or abscissa is

- A. Positive
- B. Negative
- C. Zero
- D. None of above

181. If b is a real numbers, the point (0, b) lies

- A. In the second quadrat
- B. In the third quadrant
- C. on x-axis
- D. on y-axis

182. What should be added or subtracted from $9x^2 + 16 y^2$ so as to make it a perfect square

- A. $12xy$
- B. $7xy$
- C. $24xy$
- D. $144xy$

183. $(a-b-c) (a^2 + b^2 + c^2 + ab - bc + ca)$ is equal to

- A. $a^3 + b^3 + c^3 + 3abc$
- B. $a^3 - b^3 + c^3 + 3abc$
- C. $a^3 - b^3 + c^3 - 3abc$
- D. $a^3 - b^3 - c^3 - 3abc$

184. Factor of $x^2 - 5x + 6$ are

- A. $(x+1), (x-6)$
- B. $(x+6), (x-1)$

- C. $(x+2), (x+3)$
- D. $(x-2), (x-3)$

185. In an election, there are only two candidates one who gets 43% of the votes is rejected by a majority of 420 votes. The total number of votes polled is :

- A. 1,290
- B. 1,300
- C. 1,710
- D. 3,000

186. A reduction of 20 percent in the price of suger enables a purchaser to get 4 kg more for Rs. 80. The original price of 1 Kg. of suger was:

- A. Rs. 4
- B. Rs. 4.50
- C. Rs. 5
- D. Rs. 5.50

187. The money to invest in 4% stock at Rs. 90 to provide an annual income of Rs. 100 is:

- A. Rs. 1,800
- B. Rs. 2,000
- C. Rs. 2,250
- D. Rs. 2,500

188. The average age of a class of students is 12 years. If the teacher age is also included, the average age increased by one year. The teacher's age is

- A. 41 years
- B. 52 years
- C. 53 years
- D. 54 years

189. In what proportional must a man mix milk at Rs.11 a liter with milk at Rs. 6 a liter, so that the mixture may be worth Rs. 8 a liter?

- A. 2 : 3
- B. 3 : 2
- C. 5 : 7
- D. 5 : 6

190. In an ellipse, the distance between its foci is 6 and minor axis is 8. Then its eccentricity is

- A. $3/5$
- B. $1/2$
- C. $4/5$
- D. 7

191. The function $f(x) = x/2 + 2/x$ has a local minimum at

- A. $x = 2$
- B. $x = -2$
- C. $x = 0$
- D. $x = 1$

192. Differentiation of $\log x \cdot \sin x$

- A. $\sin x \cdot 1/x$
- B. $\cos x \cdot \sin x + \log x$
- C. $\sin x \cdot 1/x + \log x \cdot \cos x$
- D. $\cos x \cdot (-1/x) + 1/\log x$

193 $y = \sin x$ then evaluate $dy/dx = ?$ then what is Integration of ?

- (a) $\sin x$
- (b) $\cos x$
- (c) $-\sin x$
- (d) $-\cos x$

194. What is the value of factorial Zero (0!)

- (a) 10
- (b) 0
- (c) 1
- (d) -1

195. $y = \sin x + \cos x - 5a$ what is dy/dx

- (a) $\cos x - \sin x$
- (b) $\cos x + \sin x - 5$
- (c) $\sin x - \sec x$
- (d) $\sin x + \cos x + 5$

196. A focus of an ellipse is at the origin. The directrix is the line $x = 4$ and

the eccentricity is $1/2$. Then the length of the semi-major axis is

- (a) $4/3$
- (b) $8/3$
- (c) $7/3$
- (d) $5/3$

197. The conjugate of a complex number is $1/i-1$. Then the complex number is

- (a) $-1/i-1$
- (b) $1/i+1$
- (c) $1/i-1$
- (d) $-1/i+1$

Answer (d) $-1/i+1$

198. The perpendicular bisector of the line segment joining P (1, 4) and Q (k, 3) has y-intercept -4 . Then a possible value of k is

- (a) 1
- (b) -4
- (c) 3
- (d) 2

Answer (b) -4

199. The mean of the numbers a, b, 8, 5, 10 is 6 and the variance is 6.80. Then which one of the following gives possible values of a and b?

- (a) $a = 0, b = 7$
- (b) $a = 5, b = 2$
- (c) $a = 3, b = 4$
- (d) $a = 2, b = 4$

200. The line passing through the points (5, 1, a) and (3, b, 1) crosses the yz-plane at the point $(0, 17/2, -13/2)$ Then

- (a) $a = 2, b = 8$
- (b) $a = 4, b = 6$
- (c) $a = 6, b = 4$
- (d) $a = 8, b = 2$

201. How many real solutions does the equation $x^7 + 14x^5 + 16x^3 + 30x -$

560 = 0 have?

- (a) 1
- (b) 4
- (c) 7
- (d) 5

202. The area of the plane region bounded by the curves $x + 2y^2 = 0$ and $x + 3y^2 = 1$ is equal to ($y^2 = y$ square)

- (a) $\frac{3}{5}$
- (b) $\frac{4}{3}$
- (c) $\frac{7}{3}$
- (d) 1

203. The L.C.M. (Lowest (or Least) Common Multiple) of two numbers is 45 times to their H.C.F (Highest Common Factor). If one of the numbers is 125 and sum of L.C.M. and H.C.F. is 1150, the other number is:

- 1. 215
- 2. 220
- 3. 225
- 4. 235

204. Question 2: If z is not less than 3, then y must be equal to x , y , z are three positive integers $x = 2y + z$ and x is not greater than 6

- 1. One
- 2. Two
- 3. Three
- 4. Four

205. Question 3: The probability of a male birth is 0.52. If a woman has three children, what is the probability that at least two are boys?

- 1. a. 0.53
- 2. b. 0.1106
- 3. c. 0.48
- 4. d. 0.1302

206. Question 4: What is the equivalent compound ratio of $5:6::7:10::6:5$

- 1. $\frac{3}{2}$
- 2. $\frac{4}{5}$

3. $6/5$
4. $5/4$

207. Question 5: The smallest number which when added to the number 1154 makes it a perfect square is

1. 1
2. 2
3. 3
4. 4

208. Question 6: If $\log_4(x) = 12$, then $\log_2(x/4)$ is equal to

1. 22
2. -12
3. 48
4. 11

209. Add $0.98 + 45.102 + 32.3333 + 31 + 0.00009$
Add $0.98 + 45.102 + 32.3333 + 31 + 0.00009$

1. 368.573
2. 210.536299
3. 109.41539
4. 99.9975
5. 80.8769543

210. Question 10: A number of 4 different digits is formed by using 1, 2, 3, 4, 5, 6, 7. What is the probability that it is divisible by 5 ?

1. a. $1/7$
2. b. $2/7$
3. c. $3/7$
4. d. $1/6$

211. Question 11: A train 'A' crosses a 160 m standing train 'B' in 15 sec and a standing person in 9 sec. What is its speed?

1. (a) 96 km/hr
2. (b) 72 km/hr
3. (c) 84 km/hr
4. (d) 92 km/hr

212. The area of a square field is 24200 sq m. How long will a lady take to cross the field diagonally at the rate of 6.6 km/hr?

1. 3 minutes
2. 2 minutes
3. 2.4 minutes
4. 2 minutes 40

213. Question 13: The present age of Ramesh is $\frac{1}{4}$ of his father's age. After 4 years, the sum of their ages will be 68. What is the present age of Ramesh?

1. (a) 10 yrs
2. (b) 15 yrs
3. (c) 16 yrs
4. (d) 12 yrs

214. $16:256=$

1. 1:8
2. 1:16
3. 1:12
4. 1:4
5. 1:26

Correct Answer: 2.

215. $7509*1001+709=?$

1. 7517218
2. 7617218
3. 12840390
4. 12940390
5. None

Correct Answer: 1.

216. Question 16: The probability of a male birth is 0.52. If a woman has three children, what is the probability that all three are girls?

1. a. 0.53
2. b. 0.1106
3. c. 0.48
4. d. 0.1302

217. Question 17: The edges of a cuboid are in the ratio 1 : 2 : 3 and its surface area is 88 cm^2 . The volume of the cuboid is

1. 24 cm^3
2. 48 cm^3
3. 64 cm^3
4. 120 cm^3

218. Question 21: Jamil is able to sell a hand-carved statue for Rs. 670 which was a 35% profit over his cost. How much did the statue originally cost him?

1. Rs. 588.20
2. Rs. 574.90
3. Rs. 555.40
4. Rs. 496.30

219. What is the chance that a leap year, selected at random, will contain 53 Sundays?

1. a. $1/7$
2. b. $2/7$
3. c. $2/53$
4. d. $1/53$

220. $\sin 45 = \underline{\hspace{2cm}}$.

1. 1
2. $\cos 45$
3. 0
4. undefined
- 5.

221. Which of the following fractions is more
Which of the following fractions is more than $1/2$?

1. $31/60$
2. $30/61$
3. $22/65$
4. $14/29$

222. Question 31: HCF of 9,21,36 =?

1. 84
2. 3
3. 7
4. 21

223. Question 32: What is the circum radius of a triangle whose sides are 7, 24 and 25 respectively?

1. 18
2. 12.5
3. 12
4. 14

224. Question 37: Find the value of $(0.75 * 0.75 * 0.75 - 0.001) / (0.75 * 0.75 - 0.075 + 0.01)$

1. 0.845
2. 1.908
3. 2.312
4. 0.001

225. Which of the following can be a product of two 3 digit number $**3$ and $**8$?

1. 1010024
2. 991014
3. 9124
4. none of these

226. Question 39: If n is an integer greater than 0, what is the remainder when $912n+3$ is divided by 10?

1. 0
2. 1
3. 9
4. 7

227. The mean of the 1st n natural no. is

1. $n/2$
2. $(n-1)/2$

- 3. $(n+1)/2$
- 4. none

228. Question 43: If $r = 5z$ then $15z = 3y$, then $r = ?$
If $r = 5z$ then $15z = 3y$, then $r = ?$

- 1. y
- 2. $2y$
- 3. $5y$
- 4. $10y$
- 5. $15y$

229. What is the product of the irrational roots of the equation $(2x-1)(2x-3)(2x-5)(2x-7)=9$?

- 1. $3/2$
- 2. 25
- 3. 45
- 4. 6

230. The value of $(0.625 * 0.0729 * 28.9)/(0.0017 * 0.025 * 8.1)$ is

- 1. 3825
- 2. 3.825
- 3. 38.25
- 4. 382.5

231. If 20 men can do a piece of work in 8 days, how many men will finish it in 10 days.

- 1. 4
- 2. 16
- 3. 12
- 4. 15

232. if 3 men or 6 boys can do a work in 20 days, then 6 men and 8 boys shall take:

- 1. 6 days
- 2. 8 days
- 3. 10 days
- 4. 20 days

233. The ration in which the two qualities of rice at Rs. 6 and Rs. 4 per kg. be mixed respectively in order the mixture may cost Rs. 4.80 per kg is:

1. 2:3
2. 3:2
3. 1:4
4. 1:5

234. The average age of a class of 50 boys which is 12.9 years is raised to 13 years by coming of a new boy, the age of the new boy is:

1. 17 years
2. 13 years
3. 18 years
4. 19 years

235. A sum of Rs. 1550 was lent partly at 5% and partly at 8% simple interest. The total interest for 3 years was Rs. 300. How much was lent at 8%.

1. Rs. 700
2. Rs. 750
3. Rs. 675
4. Rs. 800

236. A can do a piece of work in 10 days and B can do it in 15 days. How long would take to do it working together?

1. 16 days
2. 6 days
3. 8 days
4. 12 days

237. Extreme is known as:

- A. dividend
- B. component
- C. componend
- D. none of these

238. $|a+b|$

A. $= |a| + |b|$

B. $\leq |a| + |b|$

C. $> |a| + |b|$

D. $\geq |a| + |b|$

239. The solution set of $\sqrt{x} = -6$ is:

A. $\{6\}$

B. $\{36\}$

C. $\{\}$

D. -6

240. The ordered = pair satisfying $x-y = 7$ is:

A. $(7,7)$

B. $(0,7)$

C. $(7,0)$

D. $(-1, -6)$

241. $\sqrt{x+2} = 9$ is a

A. Linear equation

B. Quadratic equation

C. Radical Equation

D. Cubic equation

242. The order of the matrix $\begin{bmatrix} 3 & -2 \end{bmatrix}$ is:

A. 1×2

B. 2×1

C. 1×1

D. 2×2

243. $\begin{bmatrix} 2 & 0 \\ 0 & 3 \end{bmatrix}$ is a _____ matrix.

A. Singular

B. Unit

C. Zero

D. Diagonal

244. If $\begin{bmatrix} 3 & 6 \\ x & 8 \end{bmatrix}$ is a singular matrix, then

- A. $x = -4$
- B. $x = 4$
- C. $x = 16$
- D. $x = -24$

245. If $AB = BA$, then:

- A. A and B are equal to each other
- B. A and B are multiplicative inverse of each other
- C. A and B are both singular
- D. A and B are additive inverse of each other

246. The product of $[a \ b]$ and $\begin{bmatrix} c \\ d \end{bmatrix}$ is

- A. $[ac+bd]$
- B. $\begin{bmatrix} ac & bc \\ ad & bd \end{bmatrix}$
- C. $[a+c \ b+d]$
- D. $\begin{bmatrix} a & c \\ b & d \end{bmatrix}$

247. A quadratic equation in one variable has:

- A. One root
- B. Infinite number of roots
- C. No root
- D. Two roots

248. The solution set $x^2-x-2=0$ is

- A. $\{1\}$
- B. $\{2\}$
- C. $\{2, -1\}$
- D. $\{-1\}$

249. The solution set of $3x^2 - 10x = 0$ is

A. $\{10\}$

B. $\left\{0, \frac{10}{3}\right\}$

C. $\frac{10}{3}$

D. $\{0\}$

250. Eliminating t from:

$X=t, y=t^2$ we get

A. $x^2 = y$

B. $x = y^2$

C. $xy=1$

D. $x^2y=1$

251. The measures of two angles of a triangle are 60° and 80° . The measure of the third angle will be:

A. 60°

B. 40°

C. 80°

D. 20°

252. The base angle of a parallelogram are:

A. Complementary

B. Supplementary

C. Congruent

D. Both acute

253. The measure of a line segment joining the mid-point of two:

A. 10cm

B. 5cm

C. 20cm

D. 15cm

254. The distance of the centre from any point of the circle is called:

A. Diameter

- B. Secant
- C. Tangent
- D. Radius

255. If a point lies in the interior of a circle, then its distance from the centre is:

- A. Equal to radius
- B. Less than radius
- C. Greater than radius
- D. Greater than or equal to radius

256. The line which meets the circle in one point is:

- A. Secant
- B. Diameter
- C. Chord
- D. Tangent

257. In the log of a number the integral part is called characteristic.

- A. TRUE
- B. FALSE

258. The exponential form of $y = \log_a x$ is :

- A. $a^y = x$
- B. $y^a = x$
- C. $\log^a x = y$
- D. $x = y^a$

259. The fractional part of logarithm is called:

- A. Mantissa
- B. Characteristic
- C. Operator
- D. Divider

260. If M lies on AB between A and B, then it belongs to:

- E. Half line MA
- F. Half line MB
- G. Both half lines
- H. None of these

261. Each of the two supplementary angles can be:

- I. Right angle
- J. Acute angle
- K. Obtuse angle
- L. None of these

262. One and only one line can pass through:

- A. One Point
- B. Two Points
- C. Three points
- D. Four points

263. A Triangle whose two sides are congruent is called:

- A. Isosceles triangle
- B. Equilateral triangle
- C. Right angle triangle
- D. None of these

264. A Triangle whose three sides are congruent is called:

- A. Isosceles triangle
- B. Equilateral triangle
- C. Right angle triangle
- D. None of these

265. The side opposite to the right angle in a right angled triangle is called:

- A. hypotenuse
- B. trapezoid
- C. rhombus
- D. right angle triangle

266. A quadrilateral whose only two sides are parallel is known as:

- A. trapezoid
- B. rhombus
- C. parallelogram
- D. right angle triangle

267. A quadrilateral whose all four sides are congruent but non of its angle is a right angle is called:

- A. square
- B. rhombus
- C. parallogram
- D. right angle triangle

268. In a semi circle the angle is:

- A. Right angle
- B. Straight angle
- C. Reflex angle
- D. None of these

33. Half of diameter is:

- A. Point of contant
- B. Radius
- C. Chord
- D. Tangent

269. The line inserting in a circle in two points is:

- A. secant
- B. chord
- C. arc
- D. none of these

270. The line segment whose end points are on a circle is:

- A. secant
- B. chord
- C. arc
- D. none of these

271. $\log 1$ is equal to:

- A. 1
- B. -1
- C. 0
- D. none of there

272. $\log 2^5$ is equal to:

- A. $\log 5^2$
- B. $\log 2/5$
- C. $5 \log 2$
- D. $\log 5 - \log 2$

273. $2 \log 5$ is equal to

- A. $\log 5^2$
- B. $\log 2/5$
- C. $5 \log 2$
- D. $\log 5 - \log 2$

274. $\log 10$ is equal to:

- A. 1
- B. -1
- C. 0
- D. none of there

275. A proper fraction is a fraction in which:

- 297. Numerator is greater than Denominator
- 298. Numerator is less than Denominator
- 299. Numerator is equal to Denominator
- 300. All of the above are correct

276. $5x^2 \times 2x^{-1}$ is equal to :

- a. $5x^{-1}$
- b. $10x^2$
- c. $10x^3$
- d. $10x$

277. The product of 1.234 and 12.5 is:

- a. 154.25
- b. 15.425
- c. 2531.62
- d. 189.628

278. Express 85% as fraction:

- a. 8.5
- b. $17 / 20$
- c. $8.5 / 100$
- d. 850

279. The volume of circular cone of radius 2cm and of height 7cm will be:

- a. $29 \frac{1}{3} \text{ cm}^3$
- b. 44 cm^3
- c. 88 cm^3
- d. $113 \frac{1}{7} \text{ cm}^3$

280. The area of trapezium having parallel sides of length $2 \frac{2}{3} \text{ cm}$ and $3 \frac{1}{6} \text{ cm}$ respectively with a perpendicular height of 6 cm will be:

- a. $4 \frac{1}{2} \text{ cm}^2$
- b. 6 cm^2
- c. $17 \frac{1}{2} \text{ cm}^2$
- d. 12 cm^2

281. $x^3 + 4x^2 - 2x + 7$ is a _____ degree equation:

- a. First
- b. Second
- c. Third
- d. Zero

282. $9/4$ may be written as:

- a. $9 \frac{1}{4}$
- b. $2 \frac{1}{9}$
- c. $2 \frac{1}{4}$
- d. $4 \frac{1}{9}$

283. $\frac{36}{3} \div \frac{9}{5} \div \frac{1}{6}$:

- a. 20
- b. 30
- c. 40
- d. 50

284. Divide 93.798 by 2.43 :

- a. 42.9
- b. 46.4
- c. 38.6
- d. None of the above

285. Correct to one Decimal Place 371.85299:

- a. 371.8
- b. 371.9
- c. 372.0
- d. 371.7

286. Express the simplest form of $\frac{15}{25}$ in ratio:

- a. 5 : 3
- b. 3 : 3
- c. 5 : 5
- d. 3 : 5

287. During one week the temperature at 6 am were as follows 56, 58, 59, 62, 65, 69 and 75. What was the average temperature at 6 am:

- a. 59
- b. 57
- c. 55
- d. 62

288. H.C.F. of 20, 24, 36 is:

- a. 20
- b. 4
- c. 120
- d. 360

289. L.C.M. of 20, 24, 36 is:

- a. 20
- b. 4
- c. 120
- d. 360

291. $5(x + 1) + 3 = 4(x - 1)$:

- a. $x = -24$
- b. $x = -12$
- c. $x = 21$
- d. $x = 12$

292. $\frac{x-2}{3} - \frac{3x-4}{4} = 1$:

- a. $-1 \frac{3}{5}$
- b. $1 \frac{3}{5}$
- c. $2 \frac{5}{3}$
- d. $-7/5$

293. $\frac{z}{5} + \frac{z}{3} + \frac{z}{6} = 1$

- a. $1/7$
- b. $1 \frac{1}{8}$
- c. $1 \frac{3}{7}$
- d. $1 \frac{7}{3}$

294. Determine 'x' in the following $3x^2 + 8 = -14x$:

- a. $x = -4, -2/3$
- b. $x = 4, 2/3$
- c. $x = 6, 3/2$
- d. None of the above

295. $2y + 1/y = 3$:

- a. 2, 4
- b. 1, $\frac{1}{2}$
- c. 1, 2
- d. 5, 6

296. 5604, 2.05, 0.04, 2500 contains _____ significant figures:

- a. 4,3,2,1 respectively
- b. 1,2,3,4 respectively
- c. 4,3,1,2 respectively
- d. None of the above

297. In the right angle triangle, if Opposite = 1, Adjacent = 8 and Hypotenuse = 5. The tangent, sine, cosine of the angle is equal to:
- $1/8, 3/8, 4/5$ respectively
 - $1/8, 1/5, 1\ 3/5$ respectively
 - $2/3, 1/8, 3/5$ respectively
 - $4/5, 1\ 1/2, 3\ 1/2$ respectively
298. A _____ is a figure with two of its side parallel:
- Parallelogram
 - Trapezium
 - Rectangle
 - Sphere
299. The two consecutive positive natural number such that the square of their sum is 49. The required equation is:
- $y^2 + (y + 1)^2 = 49$
 - $x^2 + y^2 = 49$
 - $y^2 + y - 12 = 0$
 - None of the above
300. According to Pythagoras Theorem:
- $(\text{Hypotenuse})^2 = (\text{Base})^2 - (\text{Perpendicular})^2$
 - $(\text{Base})^2 = (\text{Hypotenuse})^2 + (\text{Perpendicular})^2$
 - $(\text{Hypotenuse})^2 = (\text{Base})^2 + (\text{Perpendicular})^2$
 - $(\text{Perpendicular})^2 = (\text{Base})^2 + (\text{Hypotenuse})^2$
301. Convert binary 1100 into decimal :
- 12
 - 21
 - 10
 - 11
302. $(FF)_{16} = (\quad ? \quad)_2$
- 110000
 - 001111
 - 101010
 - 111111
303. 0.00098 can be expressed as :

- a. 8×10^{-3}
- b. 8×10^{-4}
- c. $980 \times 0.98 \times 10^{-5}$
- d. All of the above

304. H.C.F of 90 and 126 is:

- a. 12
- b. 27
- c. 36
- d. 18

305. $(a + b) + c = a + (b + c)$:

- a. Associative property of addition
- b. Commutative property of addition
- c. Distributive property of addition
- d. None

306. $8/8$ is an example of:

- a. Proper Fraction
- b. Mixed Fraction
- c. Improper Fraction

307. 0.525252 is an example of:

- a. Irrational numbers
- b. Rational numbers

308. LCM of 35,56 and 80 is:

- a. 560
- b. 320
- c. 180
- d. 450

309. Express the following as decimal $74905 + \frac{87}{1000}$:

- a. 749050.87
- b. 749.05087
- c. 7490.5087
- d. 74905.087

310. Hexadecimal is a number system having numbers characterized by base of:

- a. 16
- b. 10
- c. 8
- d. 2

311. When an experiment is repeated a number of times, it is of value to know the average result :

- a. True
- b. False

312. Add 6.057, 0.0095+17.003 and express the answer correct to 2 decimal places:

- a. 23.06
- b. 23.05
- c. 23.07
- d. 23.10

313. Ratio can only be used for quantities of same kind expressed in same units:

- a. True
- b. False

314. Prime factor of 180 is:

- a. $4 \times 9 \times 5$
- b. $2 \times 2 \times 9 \times 5$
- c. $2 \times 2 \times 3 \times 3 \times 5$

315. Numbers divided by itself and unity are called as

- a. Odd numbers
- b. prime numbers
- c. composite numbers

316. 75% is equivalent to:

- a. $\frac{3}{4}$
- b. 75:100
- c. 0.75
- d. All of the above

317. In a class of 42 students, 5 were not promoted. What percent of the students were promoted:

- a. 88.1%
- b. 11.9%
- c. 22.5%
- d. 47.6%

318. During one week the temperature at 6 am were as follows 56, 48, 60, 58, 59, 62, 56. What was the average temperature at 6 am:

- a. 59
- b. 57
- c. 55

319. $2\frac{1}{5} \times 3\frac{3}{4} \times 2\frac{1}{3} = :$

- a. $\frac{77}{4}$
- b. $19\frac{1}{4}$
- c. Both a & b

320. Graph of a quadratic equation is a:

- a. Ellipse
- b. Straight Line
- c. Parabola
- d. Hyperbola

321. In a figure the measurement which determines the position of a point are called:

- a. Axis
- b. Co-ordinates
- c. Origin

322. Simplify $(a^7 \times \sqrt[10]{a}) / a^2$

- e. $a^{71/10}$
- f. $a^{91/10}$
- g. $a^{51/10}$

323. Pictorial presentation of a system with values drawn to scale is known as:
- h. Slope
 - i. Angle
 - j. Graph
 - k. None
324. Vulgar fraction are those fractions whose denominator are always 10 or multiples of ten:
- l. True
 - m. False
325. $1/\sqrt{x^3}$ can be expressed in the form of fractional indices as:
- n. $x^{-3/2}$
 - o. $x^{3/2}$
 - p. $1/x^{3/2}$
 - q. Both a and c
326. transpose the equation $ax + bx = c$ by making 'x' as the subject:
- r. $c/(a+b)$
 - s. $c/(a-b)$
 - t. $(a+b)/c$
 - u. $(a-b)/c$
327. $a^3 \times a^{-3} = ?$
- v. a^6
 - w. a^{-6}
 - x. 1
 - y. 0
328. The value of x in the equation will be $3x - 2 = 2x - 1$ will be:
- z. 1
 - aa. 2
 - bb. 3
 - cc. None
329. The factors of $x^2 + 4x + 3$ will be:
- dd. $(x + 3)(x - 1)$
 - ee. $(x + 3)(x + 1)$
 - ff. $(x - 3)(x + 1)$
 - gg. $(x - 3)(x - 1)$
330. Calculate the value of y in the given proportion $300:750 :: 24: y$
- hh. 45
 - ii. 30
 - jj. 60
331. The profit of a company in the year 2007 was \$7236. If this profit is to be divided among 3 partners in the ratio of \$:3:2, how much each receives :
- kk. \$3216, \$2580, \$1608
 - ll. \$3216, \$2412, \$1528

- mm. \$3216, \$2412, \$1608
 nn. None
332. In the fourth quadrant the values of ordinate and abscissa are:
 oo. Both positive
 pp. Both negative
 qq. Positive and negative respectively
 rr. None
333. If $A = B$ which of the following is true:
 ss. $A + x = B + x$
 tt. $B - A = 0$
 uu. $A^2 = B^2$
 vv. All of the above
334. In a right angled triangle, if opposite = 1, adjacent = 8 and hypotenuse = 5 the tangent of the angle is equal to:
 ww. 0.6
 xx. 0.125
 yy. 0.8
 zz. 0.75
335. In a triangle ABC, angle $A = 45^\circ$, angle $B = 30^\circ$, the value of angle C will be:
 aaa. 115°
 bbb. 105°
 ccc. 65°
 ddd. -115°
336. Cosine is the ratio of:
 eee. Opposite side to adjacent side
 fff. Hypotenuse to adjacent side
 ggg. Hypotenuse to opposite side
 hhh. Adjacent side to hypotenuse
337. The value of y-intercept in the equation $y = 3x - 2$ is:
 iii. 2
 jjj. 3
 kkk. -2
 lll. $1/3$
338. $\tan 90^\circ = ?$
 mmm. $1/2$
 nnn. ∞
 ooo. 0
 ppp. 1
339. Trigonometry is the branch of mathematics that deals with the sides and angles of:
 qqq. Right Angled Triangle
 rrr. Obtuse Angled Triangle
 sss. Acute Angled Triangle

340. The solution of $\tan 130^\circ$ is
 ttt. Positive
 uuu. Negative
 vvv. Depends on quadrant
 www. None
341. According to Pythagoras Theorem:
 xxx. $(\text{Hypotenuse})^2 = (\text{Base})^2 - (\text{Perpendicular})^2$
 yyy. $(\text{Base})^2 = (\text{Hypotenuse})^2 + (\text{Perpendicular})^2$
 zzz. $(\text{Hypotenuse})^2 = (\text{Base})^2 + (\text{Perpendicular})^2$
 aaaa. $(\text{Perpendicular})^2 = (\text{Base})^2 + (\text{Hypotenuse})^2$
342. Volume of a cone is given by:
 bbbb. πr^2
 cccc. $4 \pi r^2$
 dddd. $\frac{4}{3} \pi r^3$
 eeee. $\frac{1}{3} \pi r^2 h$
343. For the Co-ordinates (4,4) and (10,6) find the value of slope:
 ffff. $\frac{1}{3}$
 gggg. 3
 hhhh. $-\frac{1}{3}$
 iiiii. -3

- 1) The derivative of $\cos\theta$ is equal to
 a) $\cot\theta$ b) $-\sin\theta$ c) $\sin\theta$ d) $-\operatorname{Cosec}\theta$
- 2) Line touching the circle at only one point is called as:
 a) Tangent b) Chord c) Arc d) Radius.
- 3) A triangle having none of its sides equal is called as:
 a) Isosceles Triangle b) Scalene Triangle
 c) Equilateral Triangle d) Obtuse Triangle
- 4) Determine the slope of the straight line in the equation $4x = 3y - 2$:
 a) $\frac{2}{3}$ b) $\frac{1}{3}$ c) $\frac{4}{3}$ d) $-\frac{4}{3}$
- 5) 1 Radian is equal to:
 a) $\frac{180}{\pi}$ b) $\frac{\pi}{180}$ c) $\frac{\pi}{2}$ d) $\frac{2}{\pi}$
- 6) $\frac{\cos\theta}{\sin\theta}$ is equal to:
 a) $\cot\theta$ b) $\tan\theta$ c) $\operatorname{Cosec}\theta$ d) $\operatorname{Sec}\theta$
- 7) Octal number system deals with the numbers having base of:

- a) 2 b) 10 c) 16 d) 8
- 8) If $A = B$ then
a) $A+X = B+X$ b) $A^X=B^X$ c) $A^{1/y}=B^{1/y}$ d) All
- 9) $\sin 30^\circ$ is equal to
a) $\frac{1}{2}$ b) $\frac{1}{\sqrt{2}}$ c) $\sqrt{3}$ d) $\frac{1}{\sqrt{3}}$
- 10) A fraction in which numerator is larger than the denominator then the fraction is said to be:
a) Improper fraction b) Mixed Fraction c) Proper Fraction
- 11) The least common multiple (L.C.M) of 15, 20 and 24 is
a) 360 b) 120 c) 270 d) 90
- 12) $(x^m)^n$ can also be expressed as:
a) x^{m+n} b) x^{m-n} c) x^{mn} d) None
- 13) Factorize the following: $12x^2+7x-10$
a) $(4x+5)(3x-2)$ b) $(4x+5)(3x+2)$
c) $(4x-5)(3x+2)$ d) $(4x-5)(3x-2)$
- 14) If $1:2 :: 2:x$ the value of x will be
a) 1 b) 2 c) 3 d) 4