1. **If A : B = 2 :3, B : C = 4:5, then A :C =**

(a) 6 : 7 (b) 7: 6 **(c) 8 :15** (d) 15: 8

2. **The inverse ratio of $1\frac{3}{5} : 2\frac{1}{4}$ is**

(a) 32 : 45 **(b) 45: 32** (c) 18 :5 (d) 5: 18

3. **The ratio of 10 meters to ₹ 15**

(a)The ratio Cannot be Determined (b) 2 :3 (c) 3 :2 (d)5 :10

4. **If twice of money of A = 5 times of money of B, then the ratio of money of A to that of B**

(a) 2 : 5 (b) 15: 25 (c) 12 :30 **(d) 5: 2**

5. **The ratio $\frac{5}{3} : 2\frac{1}{4}$ is**

(a) Ratio of lesser in equality **(b)** Ratio of greater inequality (c) 20 : 9

(d) 5 :27

6. **The ratio of present age of Jadu to that of Madhu is 4 : 5. If the present age of Madhu is 30 years, then the present age of Jadu is :**

(a) 20 years (b) 25 years **(c) 24 years** (d) 35 years

7. **The ratio of 5 kg 55 gm to 35 kg 50gm :**

(a) 5 : 7 **(b) 1,011: 7,010** (c) 111 :710 (d) None of these

8. **The ratio 1 year 6 month : 2 years : 2 years 6 months**

(a) 3 : 4 : 5 (b) 2: 3 :5 (c) 2 :4 : 5 (d) None of these

9. **If $\frac{1}{2}$ of money of A = $\frac{1}{3}$ rd money of B = $\frac{1}{4}$ of money of C, then the continued ratio of money of A, B and C**

(a) 2 : 3 : 4 (b) 6: 4 :3 (c) 4 :3 : 2 (d) 3 : 2 : 1

10. **Some money is distributed between A and B in the ratio 2 : 3 . If A receives Rs 72 , then B receives**

(a) ₹ 90 (b) ₹ 144 **(c) ₹ 108** (d) None of these

11. **₹ 2530 is distributed between Ram and Hari such that Ram gets $\frac{11}{12}$ part that Hari gets. Then Hari gets :**

(a) ₹1320 (b) ₹1210 (c) ₹1230 (d) ₹1310

12. **Some amount of money is distributed among Rama, Mita and shipra such that twice the money that Rama gets = thrice the amount of money that Mita gets = four times the amount of money that Shipra gets. Then the continued ratio of their money is :**

(a) 2 : 3 : 4 (b) 4: 3 :2 **(c) 6 :4 : 3** (d) 3 : 2 : 1

13. **In a map 2 cm denotes a distance of 3 km., then the seale in the map is :**

(a) 1 : 1,50,000 (b) 1 : 15,000 **(c) 1 : 1,500** (d) 2 : 3

14. **The ratio of two numbers is 2: 3. If 6 is subtracted from the second number then the number which is subtracted from the first number so that the new ratio becomes the same as that of the previous, is**

(a) 2 (b) 6 (c) 8 **(d) 4**

15. **The sub- duplicate ratio of 49 : 81 is :**

(a) 81 : 49 **(b) 7 : 9** (c) 9 : 7 (d) $\sqrt{7} : 3$

16. $(\frac{1}{2}+\frac{1}{3}) : (\frac{1}{2}\times\frac{1}{3})$:

(a) 2 : 3 (b) 3 : 2 **(c) 5 : 1** (d) 1 : 5

17. **The compound ratio of 1.2 : 2.5, 2.1 : 3.2 and 5 : 3 is :**

(a) 21 : 25 (b) 27 : 40 **(c) 21 : 40** (d) None of these

18. **If A : B = 3 : 4, B : C = 2 : 5, then A : B : C :**

(a) 3 : 4 : 5 **(b) 3: 4 :10** (c) 4 :3 : 10 (d) 3 : 4 : 8

19. **Two numbers are in the ratio is 5 : 8 and if 6 be subtracted from each of them then the remainders are in the ratio 1 : 2, then the numbers are** :

(a) 15, 12 (b) 12, 18 **(c) 15, 24** (d) None of these

20. **If the price of a pair of pens is ₹ 95, the price of 3 books of Mathematics is ₹ 197.50, then the continued ratio of the price per piece of each item is :**

(a) 19 : 25 : 2 (b) 21: 25 : 2 (c) 19 : 30 : 3 (d) None of these

21. **If 3x+ 4y: 5x – 3y = 5 : 3, then x : y :**

(a) 16 : 27 **(b) 27 : 16** (c) 8 : 9 (d) None of these

22. **The ratio of two numbers is 12 : 5. If the antecedent is 45, then the consequent is :**

(a) 108 (b) 15 **(c) 18.75** (d) 20

23. **If the ratio of two positive numbers is 4 : 5 and their L. C. M. is 140, then the numbers are :**

(a) 28, 35 (b) 28, 40 (c) 35, 45 (d) none of these

24. **If the ratio of positive numbers is 5 : 9 and their H. C. F. is 4, then the L. C. M. of the number is**

(a) 90 **(b) 180** (c) 45 (d) None of these

25. **If the ratio of two positive numbers is 7 : 8 and their L. C. M. is 224, then their H. C. F. is :**

(a) 6 (b) 8 **(c) 4** (d) None of these

26. **The compound ratio of sub-duplicate ratio and sub-triplicate ratio of 729: 64 is**

(a) 81: 8 (b) 81 : 16 (c) 729 : 16 **(d) 243 : 32**

27. **The ratio of two numbers is 11:15. The sum of 3 times the first number and twice the second number is 630. The H. C. F. of the number is :**

(a) 10 (b) 12 (c) 15 (d) None of these

28. **The mean proportional of 4X and $16X^3$ is:**

(a) $10X^2$ (b) $12X^2$ **(c) $8X^2$** (d) $64X^4$

29. **The third proportional of 1 hour 20 minutes, 1 hour 40 minutes is:**

(a) 1 hrs 50 minutes (b) 2 hrs **(c) 2 hrs 5 minutes** (d) 2hrs 25 minutes

30. **The fourth proportional of ₹5, ₹3.50, 150 gm is:**

(a) 100 gm **(b) 105 gm** (c) 125 gm (d) None of these

31. **If A: B = B : C = C : D = 5 : 6, then A : B : C : D**

(a) 125 : 150: 180 : 216 (b) 25 : 30 : 36 : 48 (c) 75 : 84 : 96 : 108 (d) None of these

32. **If the first and third numbers of four positive numbers in continued proportion be 3 and 12 respectively then fourth number is**

(a) 27 (b) 36 (c) 48 **(d) None of these**

33. **A purse contains 1 rupee coin, 50 paisa coin, 25 paisa coin. The ratio of their numbers are x : y : z . The ratio of their values:**

(a) 4x: 2y : z (b) 2x : 3y : z (c) 4x: 3y : z (d)x : 2y : 4z

34. **Of the four numbers in proportion, if the product of two middle numbers is 48, the other numbers are :**

a) 32,16 (b) 18, 30 **(c) 3, 16** (d) 6, 24

35. **If 0.5 of A = 0.6 of B = 0.75 of C and A+B+C = 60, then the number which is to be added to A so that the result of this addition and B, C will be in continued proportion, is** :

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

36. **The mean proportion of three numbers in continued proportion is 16,then the other numbers are :**

(a) 12, 8 (b) 64, 2 (c) 80, 5 **(d) $\sqrt{.01}$, 2560**

37. **If A: B = 5 : 8, A : C = 6 : 11, then A : B: C :**

(a) 30: 36 : 55 (b) 24 : 30 : 55 **(c) 30 : 48 : 55** (d) None of these

38. **If X : Y = 2 : 3, X : Z = 5 : 7, then (3X + 2Y) : (5Y – 2 Z) :**

(a) 60 : 49 **(b) 60 : 47** (c) 47 : 60 (d) None of these

39. **The distance between two places in a map of 1: 25,00,000 scale is 8 cm. Then the actual distance between the two places is:**

(a) 200 km (b) 300 km (c) 100 km (d) None of these

40. **5 years ago, the ages of father and son were in the ratio 5 : 3. If the sum of their present ages is 90 years. The present age of father is:**

(a) 50 years (b) 60 years **(c) 55 years** (d) None of these

41. **If A:B = 5:7 and B:C = 6:11, then A:B:C is :**

(a) 55:77:66 **(b) 30:42:77** (c) 35:49:42 (d) None of these

42. **If p:q = 3:4 and q:r = 8:9, then p:r is:**

(a)1:3 (b)3:2 **(c) 2:3** (d) 1:2

43. **If A:B = 8:15, B:C = 5:8 and C:D = 4:5, then A:D is equal to:**

(a) 2:7 **(b) 4:15** (c) 8:15 (d)15:4

44. **The ratio $4^{3.5} : 2^5$ is the same as:**

(a) 4:1 (b)2:1 (c) 7:5 (d)7:10

45. **If 15% of x is the same as 20% of y, then x:y is :**

(a) 3: 4 **(b) 4:3** (c)17:16 (d)16:17

46. **If 7:x = 17.5 : 22.5, then the value of x is :**

(a) 9 (b) 7.5 (c) 6 (d) 5.5

47. **If $\frac{1}{5} : \frac{1}{x} = \frac{1}{x} : \frac{1}{1.25}$,the value of x is :**

(a) 1.5 (b) 2 **(c) 2.5** (d) 3.5

48. **If 0.4 : 1.4 :: 1.4 : x, the value of x is:**

(a) 49 **(b) 4.9** (c) 0.49 (d) 0.4

49. **The compounded ratio of (2:3), 6:11) and (11:2) is:**
(a) 1:2 **(b) 2:1** (c) 11:24 (d) 36:121

50. **If 2A = 3B = 4C, then A:B:C is:**
(a) 2:3:4 (b) 4:3:2 **(c) 6:4:3** (d) 3:4:6

51. **If $\frac{1}{3}$ A = $\frac{1}{4}$ B = $\frac{1}{5}$ C, then A:B:C is :**
(a) 4:3:5 (b) 5:4:3 **(c) 3:4:5** (d) 20:15:12

52. **If A = 1/3 B and B = ½ C, then A:B:C is :**
(a) 1:3:6 (b) 3:1:2 (c) 2:3:6 (d) 3:2:6

53. **If 2A = 3B and 4B = 5C, then A:C is:**
(a) 4:3 (b) 8:15 **(c) 15:8** (d) 3:4

54. **If x : y = 5:2, then the value of (8x + 9y) : (8x + 2y) is**
(a) 26:61 (b) 61 : 26 **(c) 29:22** (d) 22:29

55. **If x:y = 2:1, then $(x^2 - y^2) : (x^2 + y^2)$ is :**
(a) 3:5 (b) 5:3 (c) 1:3 (d) 3:1

56. **If $(4x^2 - 3y^2) : (2x^2 + 5y^2) = 12 : 19$, then x : y is :**
(a) 2:3 (b) 1:2 **(c) 3:2** (d) 2:1

57. **The fourth proportional of 0.2, 0.12 and 0.3 is:**
(a) 0.13 (b) 0.15 **(c) 0.18** (d) 0.8

58. **The third proportional to 0.36 and 0.48 is:**
(a) 0.64 (b) 0.1728 (c) $24\sqrt{.0003}$ (d) None of these

59. **The mean proportion between 0.32 and 0.02 is:**
(a) 0.8 **(b) 0.08** (c) 0.008 (d) 0.4

60. **The third proportional to (x2 – y2) and (x – y) is :**
(a) $\frac{x+y}{x-y}$ **(b) $\frac{x-y}{x+y}$** (c) x + y (d) (x – y)

61. **The ratio of third proportional to 12 and 30 and the mean proportional of 9 and 25 is:**
(a) 2:1 **(b) 5:1** (c) 7:15 (d) 9:14

62. **In a ratio which is equal to 3:4, if the antecedent is 12, then consequent is :**
(a) 9 **(b) 16** (c) 20 (d) 24

63. **If 0.4 of a number is equal to 0.06 of another number, then the ratio of the numbers is :**
(a) 2:3 (b) 3:4 **(c) 3:20** (d) 20:3

64. **A friction which bears the same ratio to $\frac{1}{27}$ that $\frac{3}{11}$ does to $\frac{5}{9}$ is**
(a) $\frac{1}{55}$ (b) 55 (c) $\frac{1}{11}$ (d) $\frac{3}{11}$

65. **If a + b : b+c : c+a = 6 : 7 : 8 and a+b+c = 14, then the value of c is :**
(a) 6 (b) 7 (c) 8 (d) 14

66. If $\frac{a}{3}=\frac{b}{4}=\frac{c}{7}$, then $\frac{a+b+c}{c}$ is equal to:

(a) 7 **(b) 2** (c) $\frac{1}{2}$ (d) $\frac{1}{7}$

67. If $a^x = b^y = c^z$ and $b^2 = ac$, then xy + yz =

(a) xz (b) – xz **(c) 2xz** (d) None of these

68. If $\frac{\left(p+\frac{1}{q}\right)^p\cdot\left(p-\frac{1}{q}\right)^p}{\left(q+\frac{1}{p}\right)^p\left(q-\frac{1}{p}\right)^q}=\left(\frac{p}{q}\right)^x$, then the value of x

(a) p - q **(b) p + q** (c) q - p (d) None of these

69. The digit in the unit place of $(2 \times 4^x)^2 + 1$ (where x is a positive integer) is:

(a) 1 **(b) 5** (c) 3 (d) None of these

70. If $\frac{\left(2^{x+1}\right)^y\cdot\left(2^{2x}\right)2^x}{\left(2^{y+1}\right)^x\cdot 2^{2y}}=1$, then the value of y is :

(a) 0 (b) 1 (c) x **(d) 2 x**

71. If $a^{x-1} = bc$, $b^{y-1} = ca$, $c^{z-1} = ab$, then $\frac{1}{x}+\frac{1}{y}+\frac{1}{z}$

(a) 1 (b) 0 (c) abc (d) None of these

72. If $3^x = 5^y = (225)^z$, then Z :

(a) $\frac{xy}{x+y}$ **(b)** $2\frac{xy}{(x+y)}$ (c) 2(x + y) (d) None of these

73. If $x \neq 1$ and $x^{x\sqrt[4]{x}}=\left(x-\sqrt[4]{x}\right)^x$, then x :

(a) -1 (b) 0 **(c)** $\frac{625}{256}$ (d) None of these

74. If $a^{1/3}+b^{1/3}+c^{1/3}=0$, then $(a+b+c)^3$:

(a) 3 abc **(b) 27 abc** (c) – 27 abc (d) None of these

75. If $y = x^{\frac{1}{3}} - x^{\frac{1}{3}}$, then $Y^3 + 3y$:

(a) $x-\frac{1}{x}$ (b) $x+\frac{1}{x}$ (c) $\frac{1}{x}-x$ (d) None of these

76. If $a = 2 + \sqrt[3]{2} + \sqrt[3]{4}$, then $a^3 - 6a^2 + 6a$:

(a) 1 (b) 0 **(c) 2** (d) None of these

77. If 3x = 9y, then $\frac{1}{x}-1$

(a) 1 (b) 2 (c) $\frac{1}{2}$ (d) 0

78. If $64^x = 2\sqrt{2}$, then x

(a) $\frac{1}{6}$ (b) $\frac{1}{2}$ **(c) $\frac{1}{4}$** (d) None of these

79. If X = 8, Y =27, then the value of $\left(x^{\frac{4}{3}} + y^{\frac{2}{3}}\right)^{\frac{1}{2}}$ is

(a) 2 **(b) 5** (c) 1 (d) 4

80. If $9 \times 81^x = \frac{1}{27^{x-3}}$, then the value of x is

(a) 2 **(b) 1** (c) 0 (d) None of these

81. If $5^{4x} = 1,00,000$, then 5^{-x} :

(a) $\frac{1}{10}$ (b) $\frac{1}{5}$ (c) $\frac{1}{2}$ (d) 2

82. If $X = \sqrt[3]{\sqrt{2}+1} - \sqrt[3]{\sqrt{2}-1}$, then the value of $X^3 + 3X$ is:

(a) 0 (b) 1 **(c) 2** (d) None of these

83. If $X = 5 + 2\sqrt{6}$ and $Xy = 1$, then $\frac{1}{x^2} + \frac{1}{y^2}$:

(a) 22 **(b) 98** (c) 49 (d) None of these

84. $\frac{\sqrt{5-\sqrt{3-\sqrt{5}}}}{\sqrt{2+\sqrt{7-3\sqrt{5}}}}$:

(a) 1 (b) 5 (c) 10 (d) None of these

85. If $X = 3 + 2\sqrt{2}$, then the value of $\left(x^3 + \frac{1}{x^3}\right) - 5\left(x^2 + \frac{1}{x^2}\right) - 5\left(x + \frac{1}{x}\right)$ is :

(a) 0 (b) 1 **(c) – 2** (d) None of these

86. $\frac{\sqrt{3}}{\sqrt{7+\sqrt{11}}} - \frac{2\sqrt{7}}{\sqrt{11+\sqrt{3}}} - \frac{\sqrt{11}}{\sqrt{3+\sqrt{7}}}$

(a) 0 (b) $2\sqrt{7} + \sqrt{3} - \sqrt{11}$ (c) 21 (d) None of these

87. If $2^{x+2y} = 2^{2x-y} = \sqrt{8}$, then:

(a) $x = \frac{3}{10}, y = \frac{9}{10}$ **(b) $x = \frac{9}{10}, y = \frac{3}{10}$** (c) $x = \frac{3}{5}, y = \frac{6}{5}$ (d) None of these

88. The mean proportional between $\sqrt{11}-\sqrt{5}$ and $13\sqrt{11}+19\sqrt{5}$ is:

(a) $\sqrt{33} - \sqrt{15}$ **(b) $\sqrt{33} + \sqrt{15}$** (c) $\sqrt{11}+\sqrt{5}$ (d) None of these

89. $\frac{3+\sqrt{6}}{5\sqrt{3}-2\sqrt{12}-\sqrt{32}+\sqrt{50}}$:

(a) $\sqrt{2}$ (b) 1 **(c) $\sqrt{3}$** (d) None of these

90. If $x = 2+\sqrt{5}$, then x^3+3x^2-29x :

(a) 7 (b) 10 (c) 0 (d) None of these

91. $\frac{\sqrt{10}+\sqrt{18}}{\sqrt{18}-\sqrt{3-\sqrt{5}}}$:

(a) $13+5\sqrt{5}$ (b) $\frac{13\quad 5\sqrt{5}}{11}$ (c) $\frac{13+5\sqrt{5}}{11}$ (d) None of these

92. If a = $\frac{1}{2+\sqrt{3}}$ and b = $\frac{1}{2-\sqrt{3}}$, then the value of $2a^2 + 3ab - 2b^2$:

(a) $3-16\sqrt{3}$ (b) $3+16\sqrt{3}$ (c) $2+8\sqrt{3}$ (d) $2-8\sqrt{3}$

93. $\sqrt{49+20\sqrt{6}}$:

(a) $5-2\sqrt{6}$ **(b) $5+2\sqrt{6}$** (c) $7+4\sqrt{3}$ (d) $7+5\sqrt{6}$

94. If $x = 7+4\sqrt{3}$, then $\sqrt{x}+\frac{1}{\sqrt{x}}$:

(a) 3 (b) 6 **(c) 4** (d) 2

95. The value of $\sqrt{6+\sqrt{6}+\sqrt{6}+.....}$ to infinity is:

(a) 6 (b) 4 (c) -2 **(d) 3**

96. If $\frac{(x-\sqrt{24})(\sqrt{75}+\sqrt{50})}{\sqrt{75}-\sqrt{50}} = 1$, then the value of x is:

(a) 6 **(b) 5** (c) 8 (d) None of these

97. If $x \propto a^2$, then $a \propto$ .....

(a) x^4 **(b) $\sqrt{x}$** (c) $\frac{1}{\sqrt{x}}$ (d) None of these

98. If $x^2+y^2 \propto x^2-y^2$, then $x \propto$ .....

(a) y (b) $\sqrt{y}$ (c) $\frac{1}{\sqrt{y}}$ (d) None of these

99. If $x \propto \frac{1}{\sqrt{a}}$, then $a \propto$ .....

(a) x^2 (b) $\sqrt{x}$ (c) $\frac{1}{x}$ **(d) $\frac{1}{x^2}$**

100. If $A \propto B^2$ and A = 4 then B = 4. When A= 3, the value of B^2 is :

(a) 12 (b) 16 (c) 9 (d) None of these

101. If X varies inversely with Y and if Y = 3, then X = 8. The value of Y when X = 2 are:

(a) 24 (b) 18 **(c) 12** (d) None of these

102. If $x^2 \propto yz, y^2 \propto zx, z^2 \propto xy$, then the product of three constant of variation is :

(a) 0 **(b) 1** (c) 3 (d) xyz

103. If X is proportional directly to Y and inversely with z; y = 5, z = 9 then $X = \frac{1}{6}$. The relation among X, y, z is:

(a) $X = \frac{3y}{10z}$ (b) $x = \frac{10z}{3y}$ (c) $x = \frac{5y}{3z}$ (d) None of these

104. If y varies inversely with the square x and x = 2 when y = 9, then the value of y when X = 3 is :

(a) 6 (b) 12 **(c) 4** (d) 9

105. If $x \propto yz^2, y \propto ab^2$ and $z \propto \frac{b}{a}$, then the relation of x with a and is:

(a) $x \propto \frac{a^4}{b}$ (b) $x \propto \frac{a}{b^4}$ (c) $x \propto \frac{b^2}{a}$ **(d) $x \propto \frac{b^4}{a}$**

106. If $b \propto a^3$ and a increases in the ratio 3: 2, then b increases in the ratio:

(a) 8 : 27 **(b) 27 : 8** (c) 2 : 3 (d) None of these

107. $\frac{(1-i)^2}{(2-i)^2}$ can be expressed in the form A+iB, then

(a) $\frac{8}{25} - i\frac{6}{25}$ (b) $-\frac{8}{25} + i\frac{6}{25}$ **(c) $-\frac{8}{25} - i\frac{6}{25}$** (d) None of these

108. Modulus of $\frac{2+i}{2-3i}$ is :

(a) $\frac{5}{13}$ **(b) $\sqrt{\frac{5}{13}}$** (c) $\sqrt{\frac{13}{5}}$ (d) None of these

109. The conjugate complex number of $\frac{(3+i)(2-3i)}{1+2i}$ is:

(a) -1+ 5i (b) 1+5i (c) -5-i (d) None of these

110. Square root of 7-24i is:

(a) ±(4-3i) (b) ± (3-4i) (c) ± (4 +3i) (d) None of these

111. If $z = \frac{1-i}{\sqrt{2}}$, then $z^2 + z^4 + z^6$:

(a) 0 (b) 1 **(c) -1** (d) 2

112. The least positive integer n for which $\left(\frac{1+i}{1-i}\right)^n = -i$ is:

(a) 2 **(b) 3** (c) 4 (d) None of these

113. If x-2 + i3y = I (x-2i), then

(a) x=4, Y= $\frac{4}{3}$ (b) x=3, y=4 (c) x = -4, y= $-\frac{4}{3}$ (d) None of these

114. The least positive integer n, for which $\left(\frac{1+i}{1-i}\right)^n = -i$ is :

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

115. The square root of 2i is

(a) ± (1-i) (b) ± ($\sqrt{2}$ +i) (c) ± (1 + $\sqrt{2}$ i) **(d) ± (1 + i)**

116. If $|x-1+3i| = 3\sqrt{2}$ then x:

(a) 4,-2 (b) -4,2 (c) 4,2 (d) None of these

117. If Z = $\frac{1+i}{1-i}$, then $z+z^2+z^3+z^4$:

(a) 1 (b) 2 (c) 2i **(d) 0**

118. If x=3+2i and y=3-2i, then x^2+xy+y^2:

(a) 32 **(b) 23** (c) 25 (d) 13

119. If Z=x+iy and $|z-2| = |2z-1|$, then $x^2 + y^2$:

(a) 9 (b) 4 **(c) 1** (d) 0

120. If A+iB = $\frac{2+i}{2-3i}$, then $A^2 + B^2$:

(a) $\frac{5}{13}$ (b) $\frac{13}{5}$ (c) 5 (d) 13

121. Modulus of $\frac{1+6i}{7-5i}$ is:

(a) $\sqrt{2}$ **(b) $\frac{1}{\sqrt{2}}$** (c) 1 (d) 2

122. If $iz^3+z^2-z+i = 0$ then the value of $|z|$ is:

(a) 1 (b) 2 (c) 3 (d) None of these

123. Let $z_1 = 2 + 3i$ and $z_2 = 3+2i$ be two complex numbers, then

(a) $z_1 > z_2$ (b) $z_1 < z_2$ (c) z_1^2 **(d) None of these**

124. Modulus of $\frac{\sqrt{3}\ \ i\sqrt{2}}{\sqrt{2}+i\sqrt{3}}$ is:

(a) 2 **(b) 1** (c) $\frac{2}{3}$ (d) None of these

125. If X = $\frac{1+i}{\sqrt{2}}$, then the value of $x^6+x^4+x^2+1$

(a) 4 (b) 2 (c) 1 **(d) 0**

126. If (1+i) (2-i) = a+ib, then the value of $a^2 + b^2$ is:

(a) 3 (b) 5 **(c) 10** (d) None of these

127. If $z+\frac{1}{z}=1$, then the value of $z^{14} + \frac{1}{z^{14}}$ is:

(a) 0 (b) 2 (c) 1 **(d) -1**

128. If α, β are the complex cube roots of unity, then the value of $\alpha^4 + \beta^4 + \alpha^{-1} . \beta^{-1}$ is:

(a) -1 **(b) 0** (c)1 (d) None of these

129. In how many ways 1 boy and 1 girl can be selected out of 12 boys and 7 girls for a Kho Kho team

(a) 120 **(b) 84** (c) 19 (d) 5

130. How many numbers can be formed between 100 to 1000 out of 1,3,4,7,8 without repetition of any number

(a) 60 (b) 84 (c) 120 (d) 92

131. How many numbers can be formed between 100 to 1000 out of 1,3,4,7,8 if repetition of any number is allowed

(a) 60 (b) 84 **(c) 125** (d) 92

132. The value of $^{12}p_2 + {}^{8}p_3$ is:

(a) 648 **(b) 468** (c) 846 (d) None of these

133. If $^{n}p_3 = 120$, then n :

(a) 8 (b) 4 **(c) 6** (d) None of these

134. If $^{11}p_r = 110$, then the value of r is:

(a) 2 (b) 10 (c) 4 (d) None of these

135. If $^{n}p_5 = 20.\ ^{n}p_3$, then the value of n is:

(a) 6 **(b) 8** (c) 7 (d) None of these

136. If $^{n-1}p_3 : {}^{n+1}p_3 = 28 : 55$, then n :

(a) 6 (b) 8 **(c) 10** (d) 12

137. If $^{m+n}p_2 = 42$ and $^{m-n}p_2 = 6$, then the values of m and n are:

(a) m=6, n=2 **(b) m=5, n=2** (c) m=6, n=1 (d) None of these

138. If $^{2n+1}p_{n-1} : {}^{2n-1}p_n = 3 : 5$, then n :

(a) 4 (b) 6 (c) 5 (d) None of these

139. If $^{9}p_{5+5}.\ ^{9}p_4 = {}^{10}p_r$, then the value of r is

(a) 3 (b) 4 **(c) 5** (d) None of these

140. The number of permutations if the letters in the word "BANANA" in which two letters N do not come together is:

(a) 40 (b) 60 (c) 80 (d) 100

141. There are 11 distinct books. Among them 6 books can be arranged in a shelf. The number of arrangements so that 3 particular books will be always side by side is:

(a) 2,016 **(b) 8,064** (c) 144 (d) None of these

142. The number of different numbers of 6 digits (without repetition) can be formed from the digits 3, 1, 7,0,9,5 is

(a) 600 (b) 120 (c) 720 (d) None of these

143. Five digit numbers are to be formed by using the digits 0,1,2,3,4,7,8 (without repletion). The total number of such numbers is:

(a) 2160 (b) 2140 (c) 2120 (d) 2000

144. The total number of arrangements of the letters in the expression $x^3y^2z^4$ when written in full length is

(a) 2520 **(b) 1260** (c) 610 (d) None of these

145. The number of arrangements of the letters of the word BANANA in which the two N's do not appear adjacently is:

(a) 100 (b) 80 **(c) 40** (d) 60

146. The number of different words that can be formed from the letters of the word "TRIANGLE" so that no vowels are together is
(a) 7200 (b) 36000 **(c) 14400** (d) 1240

147. The number of ways in which the letters of the word "VOWEL" can be arranged so that the letters O,E occupy even places is:
(a) 12 (b) 18 (c) 24 (d) None of these

148. 5 letters can be posted in 4 letters in:
(a) 256 ways **(b) 1024 ways** (c) 625 ways (d) None of these

149. 3 distinct prizes can be distributed among 10 boys (any boy can get more than once) in:
(a) 310 ways (b) 720 ways **(c) 1000 ways** (d) None of these

150. Total number of ways in which the letters of the word "STRANGE" can be arranged so that the vowels may appear in the odd places is:
(a) 1370 **(b) 1440** (c) 1470 (d) None of these

151. The number of six letter word that can be formed using the letters of the word "assist" in which s's alternate with other letters is:
(a) 12 (b) 24 (c) 6 (d) 18

152. If $^{n}c_{12} = {}^{n}c_{8}$, then n :
(a) 20 (b) 12 (c) 6 (d) None of these

153. If $^{8}c_{r} \cdot {}^{7}c_{3} = {}^{7}c_{2}$, then r :
(a) 3 (b) 4 (c) 2 (d) 6

154. If $^{n}c_{r} + {}^{n}c_{r+1} = {}^{n+1}c_{x}$, then x :
(a) 2 (b) r **(c) r+1** (d) None of these

155. If $^{n}c_{6} : {}^{n-3}c_{3} = 33 : 4$, then n :
(a) 9 (b) 10 **(c) 11** (d) None of these

156. If $^{15}c_{r} : {}^{15}c_{r-1} = 11 : 5$, then r :
(a) 4 **(b) 5** (c) 6 (d) 7

157. If $^{n}p_{r} = 720 \; {}^{n}c_{r}$, then r :
(a) 4 (b) 5 **(c) 6** (d) 8

158. A man has 6 friends. The total number of ways so that he can invite one or more of his friends is equal to:
(a) 64 (b) 60 (c) 720 **(d) 63**

159. The total number of factors of 210 (excluding 1 and 210) is:
(a) 14 (b) 16 (c) 18 (d) 20

160. Everybody in a room shakes hands with everybody else. The total number of handshakes is 66. The total number of persons in the room is :
(a) 11 **(b) 12** (c) 10 (d) 14

161. There are 10 lamps in a room. Each one of them can be switched on independently. The number of ways in which the hall can be illuminated is:
(a) 100 (b) 10 24 **(c) 1023** (d) 10!

162. There are 11 questions in an examination paper of Mathematics. A candidate has to answer 6 questions of which the question under 1 is compulsory. The total number of selections of his answering in questions is:
(a) 462 **(b) 252** (c) 210 (d) None of these.

163. There are two groups in a questions paper; each group contains 7 questions. A candidate has to answer questions but taking not more than 5 from any group. Total number of selections of 9 questions:
(a) 1470 (b) 735 (c) 145 (d) None of these

164. In an election, there are 5 candidates and among them only 3 are to be selected. A voter can give vote to any number of candidates not more than the numbers to be elected. Then the total number of voter may give his votes is equal to:
(a) 10 (b) 5 (c) 15 **(d) None of these**

165. There are 10 points in a plane and among them 4 are collinear. Then total number of triangles formed by joining them is:
(a) 120 (b) 60 **(c) 116** (d) None of these

166. Out of 18 points in a plane, no three are in the same straight line except 5 points which are collinear. Then the number of straight lines obtained by joining them is
(a) 140 (b) 142 **(c) 144** (d) 146

167. The number of diagonals that can be drawn by joining the vertices of an octagon is:
(a) 28 (b) 28 **(c) 20** (d) None of these

168. The number of ways in which a committee of 5 can be chosen from 10 candidates so as to exclude the youngest if it includes the oldest is:
(a) 178 **(b) 196** (c) 202 (d) None of these

169. The number of committees of 5 consisting at least one female member, that can be formed from 6 males and 4 females is :
(a) 246 (b) 252 (c) 6 (d) None of these

170. A polygon has 44 diagonals, then the number of its sides are:
(a) 11 (b) 7 (c) 8 (d) None of these

171. There are 8 questions in an examination paper and each question has an alternative. The number of ways in which a student can give his answer is :
(a) 6561 (b) 256 **(c) 6560** (d) None of these

172. Total number of 9 digit numbers which have all different digit is:
(a) 10! (b) 9! **(c) 9 x 9!** (d) 10 x 10!

173. The total number of selections of one or more fruits from same size of 5 apples, same size of 4 oranges and same size of 3 mangoes is:
(a) 120 **(b) 119** (c) 60 (d) 59

174. The total number of selections of one or more fruits from different sizes of 5 apples, different sizes of 4 oranges and different sizes of 3 mangoes is:
(a) 4095 (b) 4096 (c) 120 (d) 119

175. The total number of selections of at least one fruit of each kind from different sizes of 5 apples, different sizes of 4 oranges and different sizes of 3 mangoes is:
(a) 4096 (b) 120 **(c) 3255** (d) 4095

176. In a football competition, there were 153 matches. A match occurs between two teams. The total number of teams took part in the competition is:
(a) 17 **(b) 18** (c) 19 (d) None of these

177. Total number of words formed by taking 3 letters from the word "MARCH" and 2 letters from the word "JUNE" is:
(a) 60 (b) 120 (c) 119 **(d) 7,200**

178. There are 5 points on a straight line and 10 points on another straight line and these two straight lines are parallel. The total number of triangles formed by joining them is:
(a) 325 (b) 455 (c) 120 (d) None of these

179. The total number of arrangements in which 5 positive signs and 3 negative signs can be placed in a row such that no two negative signs never come side by side is:
(a) 15 **(b) 20** (c) 720 (d) None of these

180. Total number of committees formed of 4 men and 3 women from 7 men and 5 women so that Mr. X and Mr. Y do not come in the same committee is:
(a) 350 (b) 120 **(c) 230** (d) None of these

181. A box contains 10 electric lamps of which 4 are faulty. The number of samples of 6 lamps drawn from the box so that each sample contains 2 faulty lamps is:
(a) 90 (b) 35 (c) 60 (d) None of these

182. If f(x) = 5, then f(5) :
(a) 25 **(b) 5** (c) 1 (d) None of these

183. If $f(x) = 2^x$, then f ($\log_2^x$):
(a) Log2 (b) 0 (c) 1 **(d) x**

184. If $f(x) = \frac{2x+3}{4x-1}$, then f(x) . f($\frac{1}{x}$) :
(a) 1 **(b)** $\frac{6x^2+13x+6}{17x-4-4x^2}$ (c) $\frac{6x^2}{4x^2}\ \frac{13x+6}{4\ \ 17x}$ (d) None of these

185. If f(x-1) = 2x-3, then f (x) :
(a) 2x - 1 (b) 2x + 1 (c) x – 2 (d) 3x + 2

186. If $f(x) = \frac{x^2}{x}$, then f (0) :
(a) 0 (b) 1 (c) x **(d) Does not exist**

187. If $f(x) = |x-1| - x$, then f (-5) :
(a) 1 (b) -1 **(c) 11** (d) None of these

188. If f(x) = x – [x] where [x] denotes the greatest integer contained in x but not greater than x, then f(2.9) :
(a) 0.1 (b) -0.1 **(c) 0.9** (d) None of these

189. If f(x) = x - |x|, then f (-3) :
(a) -6 (b) 6 (c) 0 (d) None of these

190. If $f(x) = \sqrt{x-4} + \sqrt{6-x}$, then the domain of f(x) is:
(a) $-6 \le x \le 4$ **(b) $4 \le x \le 6$** (c) $-4 \le x \le 6$ (d) $-6 \le x \le -4$

191. If $f(x) = x^2$ and g(x) = log, then g {f(e)} :
(a) e **(b) 2** (c) e^2 (d) None of these

192. The domain of $f(x) = \frac{x^2 - 4}{x - 2}$ is :
(a) {2} (b) {-2} **(c) $-\infty < x < 2,\ 2 < x < \infty$** (d) $-2 < x < 2$

193. If 2f(x) + 3f(-x) = 5 -6x, then f(x) :
(a) 6x+1 (b) 1 – 6x (c) 6x - 1 (d) None of these

194. If $f(x) = +\sqrt{x^2}$ and $g(x) = x$ are identical then:
(a) $-\infty < x < \infty$ (b) $0 < x < \infty$ (c) $-\infty < x \le 0$ **(d) $0 \le x < \infty$**

195. If $f(x) = 2^{px+q}$, then f(a) . f(b) . f(c) :
(a) $f(a+b+c) \cdot 4^q$ (b) $f(a+b+c) \cdot 2^q$ (c) $f(a+b+c) \cdot 4$ (d) None of these

196. If x is a real number and $f(x) = \frac{x}{\log(2+x)}$, then the domain of f(x) is:
(a) $-\infty < x < 2$ (b) $-\infty < x < -1$ **(c) $-2 < x < \infty$** (d) None of these

197. If $f(x) = x - \frac{1}{x}$ and $f(\frac{1}{x}) = k \cdot f(x)$, then k :
(a) 1 **(b) -1** (c) $\frac{1}{2}$ (d) 2

198. If $f(x) = \frac{1+x}{1-x}$, then $f\{f(\frac{1}{x})\}$:
(a) x (b) $\frac{1}{x}$ (c) $-\frac{1}{x}$ **(d) – x**

199. If $f(x) = 2x^2 - 5x + 4$, and $2f(x) = f(2x)$, then x :
(a) 1 (b) -1 **(c) ± 1** (d) 2

200. If $f(x) = \sqrt{25 - x^2}$, $(-5 \le x \le 5)$, then the range of f(x) is:
(a) $0 \le f(x) \le 5$ (b) $0 < f(x) < 5$ (c) $-5 \le f(x) \le 0$ (d) None of these

201. If $f(x) = \frac{3x-5}{5x-3}$, then $f(x) \cdot f(\frac{1}{x})$:
(a) x (b) $\frac{1}{x}$ **(c) 1** (d) – 1

202. The average number of first five prime number is :
(a) 4.5 (b) 5 **(c) 5.6** (d) 7.5

203. The average of first five multiples of 3 is:
(a) 3 **(b) 9** (c) 12 (d) 15

204. The average of first 50 natural number is:
(a) 12.25 (b) 21.25 (c) 25 **(d) 25.5**

205. The mean of $1^2, 2^2, 3^2, 4^2, 5^2, 6^2, 7^2$ is:
(a) 40 **(b) 20** (c) 30 (d) 10

206. The average of all odd numbers upto 100 is:
(a) 51 **(b) 50** (c) 49.5 (d) 49

207. If a, b, c, d, e are five consecutive odd numbers, their average is:
(a) 5(a+4) (b) $\frac{abcde}{5}$ (c) 5(a+b+c+d+e) **(d) None of these**

208. The average of 7 consecutive numbers is 33. The largest of these numbers are:
(a) 36 (b) 33 (c) 30 (d) 28

209. The average of four consecutive even numbers is 27. The largest of these numbers is:

(a) 36 (b) 32 **(c) 30** (d) 28

210. On a certain day, temperatures recorded in a city are as follows:

Time: 6 a.m.	**12 a.m.**	**6 p.m.**	**12 p.m.**
Temp: 12.4^0C	**18.8^0C**	**16.6^0C**	**10^0C**

The average temperature for the day is:

(a) 12^0C **(b) 14.45^0C** (c) 15.2^0C (d) 15.8^0C

211. The average height of 30 boys out of a class of 50, is 160 cm. If the average height of the remaining boys is 165 cm, the average height of the whole class (in cm) is:

(a) 161 **(b) 162** (c) 163 (d) 164

212. There are three sections of a class in a school. The number of students in the three sections is 38, 32 and 40 and the average age of the students respectively. What is the average age of the class?

(a) 15.9 yrs. (b) 15.92 yrs. (c) 15.96 yrs. **(d) None**

213. The average of three numbers is 20. If two numbers are 16 and 22, the third is:

(a) 22 (b) 20 (c) 19 (d) 18

214. The average of two numbers is M. If one number is N, then the other number is:

(a) 2N (b) 2 M (c) M – N **(d) 2 M – N**

215. The average of five results is 46 and that of the first four is 45. The fifth result is:

(a) 1 (b) 10 (c) 12.5 **(d) 50**

216. The average of Kanchan's marks in 7 subjects is 75. His average in six subjects excluding Science is 72. How many marks did he get in Science:

(a) 72 (b) 90 **(c) 93** (d) None of these

217. The average of eight numbers is 14. The average of six of these numbers is 16. The average of the remaining two numbers is:

(a) 4 **(b) 8** (c) 16 (d) Data inadequate

218. The average price of three items of furniture is ₹ 15,000. If their prices are in the ratio 3:5:7, the price of the cheapest item is:

(a) ₹ 9,000 (b) ₹ 15,000 (c) ₹ 18,000 (d) ₹ 21,000

219. Of the three numbers, second is twice the first and is also thrice the third. If the average of the three numbers is 44, the largest number is:

(a) 24 (b) 36 **(c) 72** (d) 108

220. The average of ten numbers is 7. If each number is multiplies by 12, then the average of new set of numbers is:

(a) 7 (b) 19 (c) 82 **(d) 84**

221. A man spends ₹ 1,800 monthly on an average for the first four months and ₹ 2,000 monthly for the next eight months and saves ₹ 5,600 a year. His average monthly income is:

(a) ₹ 2,000 (b) ₹ 2,200 **(c) ₹ 2,400** (d) ₹ 2,600

222. The average age of 30 students of a class is 12 years. The average age of a group of 5 of the students is 10 years and that of another group of 5 of them is 14 years. What is the average age of the remaining students?

(a) 8 years. (b) 10 years. **(c) 12 years.** (d) 14 years.

223. A class has two sections, in one of which there are 40 students with an average of 14.5 years. The average of the class is 14.2 years. If there be 32 students in the other section, its average age is:

(a) 13.5 years. (b) 13.6 years. (c) 13.7 years. **(d) None**

224. The average of 50 numbers is 38. If two numbers, namely 45 and 55 are discarded, the average of the remaining numbers is:
(a) 36.5 (b) 37 **(c) 37.5** (d) 37.52

225. The mean of 100 observations was calculated as 40. It was found later on that one of the observations was misread as 83 instead of 53. The correct mean is:
(a) 39 **(b) 39.7** (c) 40.3 (d) 42.7

226. The average of six numbers is 30. If the average of first four is 25 and that of last three is 35, the fourth number is:
(a) 25 (b) 30 (c) 35 d) 40

227. The average of 11 observations is 60. If the average of first five observations is 58 and that of the last five is 56, then the sixth observation is:
(a) 90 (b) 110 (c) 85 (d) 100

228. In sever given numbers, the average of first four numbers is 4 and that of the last four numbers is also 4. If the average of these seven numbers is 3, the fourth number is:
(a) 3 (b) 4 (c) 7 **(d) 11**

229. The average of 25 results is 18. The average of first twelve of them is 14 and that of last twelve is 17. The thirteenth result is:
(a) 28 **(b) 78** (c) 72 (d) 85

230. Out of four numbers, the average of first three is 16 and that of the last three is 15. If the last number is 18, the first number is:
(a) 2 **(b) 21** (c) 23 (d) 25

231. Mukesh has twice as much money as Sohan and Sohan has 50% more money than what Pankaj has. If the average money with them is ₹ 110, then Mukesh has:
(a) ₹ 55 (b) ₹ 60 (c) ₹ 90 **(d) ₹ 180**

232. In what ratio must rice at ₹ 9.30 per kg be mixed with rive at ₹ 10.80 per kg so that the mixture be worth ₹ 10 per kg?
(a) 7:8 **(b) 8:7** (c) 31:36 (d) 36:31

233. In what ratio must wheat at ₹ 3.20 per kg be mixed with wheat at ₹ 2.90 per kg so that the mixture be worth ₹ 3.08 per kg?
(a) 4:3 (b) 3:4 (c) 2:3 **(d) 3:2**

234. How many kilograms of sugar costing ₹ 9 per kg must be mixed with 27 kg of sugar costing ₹ 7 per kg so that there may be a gain of 10% by selling the mixture at ₹ 9.24 per kg?
(a) 54 kg **(b) 63 kg** (c) 36 kg (d) 42 kg

235. In what ratio must water be mixed with milk to gain 16⅔% on selling the mixture at cost price?
(a) 2:3 (b) 4:3 (c) 6:1 **(d) 1:6**

236. Two vessels A and B contain milk and water mixed in the ratio 8:5 and 5:2 respectively. The ratio in which these two mixtures be mixed to get a new mixture containing milk and water in the ratio 9:4?
(a) 2:7 (b) 5:2 (c) 3:5 (d) 5:7

237. In what ratio must water be mixed with milk costing ₹ 12 per liter to obtain a mixture worth of ₹ 8 per liter?
(a) 3:2 (b) 2:3 **(c) 1:2** (d) 2:1

238. A sum of ₹ 4,000 is lent out in two parts, one at 8% simple interest and the other at 10% simple interest. If the annual interest is ₹ 352, the sum lent at 8% is:
(a) ₹ 1,600 **(b) ₹ 2,400** (c) ₹ 1,800 (d) ₹ 2,800

239. A merchant has 1,000 kg of sugar, part of which he sells at 8% profit and the rest at 18% profit. He gains 14% on the whole. The quantity sold at 18% profit is:
(a) 640 kg (b) 560 kg **(c) 600 kg** (d) 400 kg

240. **Two vessels A & B contain milk and water mixed in the ratio 4:3 and 2:3. In what ratio must these mixtures be mixed to form a new mixture containing half milk and half water:**
(a)7:5 (b) 1:2 (c) 2:1 (d) 6:5

241. **A jar full of whisky contains 40% alcohol. A part of this whisky is replaced by another containing 19% alcohol and now the percentage of alcohol was found to be 26%. The quantity of whisky replaced is:**
(a) $\frac{1}{3}$ **(b)** $\frac{\mathbf{2}}{\mathbf{3}}$ (c) $\frac{2}{5}$ (d) $\frac{3}{5}$

242. **729 ml of mixture contains milk and water in the ratio 7:2. How much more water is to be added to get a new mixture containing milk and water in the ratio 7:3?**
(a) 79 ml **(b) 81 ml** (c) 72 ml (d) 91 ml

243. **A sum of ₹ 312 was divided among 100 boys and girls in such a way that each boy gets ₹ 3.60 and each girl ₹ 2.40. The number of girls is:**
(a) 40 (b) 60 (c) 35 (d) 65

244. **A man covered a distance of 2,000 km in 18 hours partly by bus at 72 kmph and partly by train at 160 kmph. The distance covered by bus is:**
(a) 1280 km **(b) 720 km** (c) 860 km (d) 640 km

245. **A sum of ₹ 36.90 is made up of 180 coins which are either 10 paise coins or 25 paise coins. The number of 10 paise coins is:**
(a) 126 **(b) 54** (c) 120 (d) 60

246. **A dishonest milkman professes to sell his milk at cost price but he mixes it with water and thereby gains 25%. The percentage of water in the mixture is:**
(a) 25% **(b) 20%** (c) $6\frac{1}{4}\%$ (d) 4%

247. **A mixture of 20kg of spirit and water contains 10% water. How much water must be added to this mixture to raise the percentage of water to 25%?**
(a) 4 kg (b) 5 kg (c) 8 kg (d) 30 kg

248. **A container contains 40 kg of milk. From this container 4 kg of milk was taken out and replaced by water. This process was repeated further two times. Who much milk is now contained by the container?**
(a) 27.36 kg **(b) 29.16 kg** (c) 28 kg (d) 26.34 kg

249. **A can contains a mixture of two liquids A and B in the ratio 7:5. When 9 liters of mixture are drawn off and the can is filled with B, the ratio of A and B becomes 7:9. How many liters of liquid A was contained by the can initially?**
(a) 25 **(b) 21** (c) 20 (d) 10

250. **At the rate of 6% p.a. simple interest, a sum of ₹ 2,500 will earn how much interest by the end of 5 years?**
(a) ₹ 150 (b) ₹ 700 **(c) ₹ 750** (d) ₹ 3,250

251. **A person borrowed ₹ 500 at the rate of 5% per annum S.I. What amount will he pay to clear the debt after 4 years?**
(a) ₹ 200 (b) ₹ 550 **(c) ₹ 600** (d) ₹ 700

252. **If A lends ₹ 3,500 to B at 10% p.a. and B lends the same sum to C at 11.5% p.a., then the gain of B (in ₹) in a period of 3 years is:**
(a) 107.50 (b) 115.50 **(c) 157.50** (d) 177.50

253. **In what time will ₹ 500 give ₹ 50 as interest at the rate of 5% p.a. S.I.?**
(a) 2 Years (b) $2\frac{1}{2}$ Years (c) 3 Years (d) 4 Years

254. Avinash borrowed ₹ 5,000 from Sanjay at simple interest. After 3 years, Sanjay got ₹ 300 more than what he had given to Avinash. What was the rate of interest per annum?
(a) 2% (b) 5% (c) 8% (d) 10%

255. Ashok took a loan of ₹ 15,000 for 3 years at simple interest. If the total interest paid is ₹ 2,700, what is the rate of interest per annum?
(a) 5.4% **(b) 6%** (c) 9% (d) 18%

256. Rakesh took a loan for 6 years at the rate of 5% p.a. S.I. If the total interest paid was ₹ 1,230, the principal was:
(a) ₹ 4,100 (b) ₹ 4,920 (c) ₹ 5,000 (d) ₹ 5,300

257. How much should a person lend at simple rate of interest of 15% in order to have ₹ 784 at the end of $1\frac{1}{2}$ Years?
(a) ₹ 640 (b) ₹ 620 (c) ₹ 610 (d) ₹ 680

258. Satish took a loan at 10% p.a. S.I. After 4 years, he returned the principal along with the interest. If he returns in all ₹ 3,500, what is the principal amount?
(a) ₹ 3,250 **(b) ₹ 2,500** (c) ₹ 3,150 (d) ₹ 2,100

259. ₹ 800 amount to ₹ 920 in 3 years at simple interest. If the interest rate is increased by 3%, it would amount to how much?
(a) ₹ 992 (b) ₹ 1,056 (c) ₹ 1,112 (d) ₹ 1,182

260. The simple interest at x% for x years will be ₹ X on a sum of:
(a) ₹ x (b) ₹ 100x **(c) ₹ $\left(\frac{100}{x}\right)$** (d) ₹ $\left(\frac{100}{x^2}\right)$

261. If ₹ 64 amount to ₹ 83.20 in 2 years, what will ₹ 86 amount to in 4 years at the same rate percent per annum?
(a) ₹ 127.40 (b) ₹ 124.70 (c) ₹ 114.80 **(d) ₹ 137.60**

262. The simple interest on a sum of money at 5% is ₹ 48 for 4 years. The simple interest on the same sum for 5 years at 4% will be:
(a) ₹ 40 **(b) ₹ 48** (c) ₹ 50 (d) ₹ 60

263. A certain sum of money lent out at S.I. amounts to ₹ 690 in 3 years and ₹ 750 in 5 years. The sum lent is:
(a) ₹ 400 (b) ₹ 450 (c) ₹ 500 **(d) ₹ 600**

264. A certain sum of money at simple interest amounts to ₹ 1,012 in $2\frac{1}{2}$ Years and to ₹ 1,067.20 in 4 years. The rate of interest per annum is:
(a) 2.5% (b) 3% **(c) 4%** (d) 5%

265. A sum of money at simple interest amounts to ₹ 2,240 in 2 years and to ₹ 2,600 in 5 years. What is the principal amount?
(a) ₹ 1,520 (b) ₹ 1,880 (c) ₹ 2,120 **(d) None**

266. For how many years should ₹ 600 be invested at 10% p.a. in order to earn the same simple interest as is earned by investing ₹ 800 at 12% p.a. for 5 years?
(a) 6 **(b) 8** (c) 12 (d) 16

267. The simple interest on a certain sum of money at the rate of 5% p.a. for 8 years is ₹ 840. At what rate of interest the same amount of interest can be received on the same sum after 5 years?
(a) 6% **(b) 8%** (c) 9% (d) 10%

268. The simple interest on ₹ 10 for 4 months at the rate of 3 paise per rupee per month is
(a) ₹ 1.20 (b) ₹ 12 (c) ₹ 120 (d) ₹ 1200

269. **A person takes a loan of ₹ 200 at 5% simple interest. He returns ₹ 100 at the end of 1 year. In order to clear his dues at the end of 2 years, he would pay:**
(a) ₹ 115.50 (b) ₹ 110 **(c) ₹ 115** (d) ₹ 100

270. **The interest on a certain deposit at 4.5% p.a. is ₹ 202.50 in one year. How much will the additional interest in one year be on the same deposit at 5% p.a.?**
(a) ₹ 22.5 (b) ₹ 20.25 (c) ₹ 225 (d) ₹ 427.50

271. **A sum of money was lent at simple interest at 11% p.a. for $3\frac{1}{2}$ years and $4\frac{1}{2}$ years respectively. If the difference in interests for two periods was ₹ 412.50, then the sum is:**
(a) ₹ 3,250 (b) ₹ 3,500 **(c) ₹ 3,750** (d) ₹ 4,250

272. **Gulshan Kumar borrows ₹ 300 at 5% and ₹ 450 at 6% at the same time and on the condition that the whole loan will be repaid when the total interest amounts to ₹ 126. The loan will have to be repaid after how many years:**
(a) 2 **(b) 3** (c) 4 (d) 5

273. **Prabhat took a certain amount as a loan from a bank at the rate of 8% p.a. S.I. and gave the same amount to Ashish as a loan at the rate of 12% p.a. If at the end of 12 years, he made a profit of ₹ 320 in the deal, what was the original amount:**
(a) ₹ 2,000 (b) ₹ 3,000 (c) ₹ 4,000 **(d) None of these**

274. **Vishal lent ₹ 150 to Sandeep for 4 years and ₹ 600 to Deepak for 2 years. If he receives ₹ 90 as simple interest altogether, the rate of interest is:**
(a) 12% (b) 10% **(c) 5%** (d) 4%

275. **A lent ₹ 1,200 to B for 3 years at a certain rate of simple interest and ₹ 1,000 to C for the same time at the same rate. If he gets ₹ 50 more from B than from C, then the rate percent is:**
(a) $8\frac{1}{3}$ (b) $6\frac{2}{3}$ (c) $10\frac{1}{3}$ (d) $9\frac{2}{3}$

276. **Rahul borrowed ₹ 830 from Mr. Lal at 12% p.a. S.I. for 3 years. He then added some more money to the borrowed sum and lent it to Shobha for the same period at 14% p.a. rate of interest. If Rahul gains ₹ 93.90 in the whole transaction, how much money did he add from his side:**
(a) ₹ 35 (b) ₹ 55 (c) ₹ 80 **(d) ₹ 105**

277. **The difference between the interests received from two different banks on ₹ 500 for 2 years, is ₹ 2.50. The difference between their rates is:**
(a) 1% (b) 0.5% **(c) 0.25%** (d) 42.5%

278. **The simple interest on ₹ 1,820 from March 9, 1994 to May 21, 1994 at $7\frac{1}{2}$% rate will be :**
(a) ₹ 29 (b) ₹ 28.80 **(c) ₹ 27.30** (d) ₹ 22.50

279. **A sum was put at simple interest at a certain rate for 2 years. Had it been put at 3% higher rate, it would have fetched ₹ 72 more. The sum is:**
(a) ₹ 1,200 (b) ₹ 1,500 (c) ₹ 1,600 (d) ₹ 1,800

280. **The amount of ₹ 7,500 at compound interest at 4% per annum for 2 years, is:**
(a) ₹ 7,800 (b) ₹ 8,100 **(c) ₹ 8,112** (d) ₹ 8,082

281. **If the simple interest on a sum of money at 5% per annum for 3 years is ₹ 1,200, the compound interest on the same sum for the same period at the same rate, is:**
(a) ₹ 1,260 **(b) ₹ 1,261** (c) ₹ 1,264 (d) ₹ 1,265

282. **The difference between the compound interest and the simple interest on a sum of money for 2 years at $12\frac{1}{2}$% per annum is ₹ 150. The sum is:**
(a) ₹ 9,000 (b) ₹ 9,200 (c) ₹ 9,500 **(d) ₹ 9,600**

283. **If the difference between the compound interest, compounded half yearly and the simple interest on a sum at 10% per annum for one year is ₹ 25, the sum is:**

(a) ₹ 9,000 (b) ₹ 9,500 **(c) ₹ 10,000** (d) ₹ 10,500

284. The difference in compound interest and simple interest on a certain amount at 10% per annum at the end of the third year is ₹ 620. What is the principal amount?
(a) ₹ 40,000 (b) ₹ 1,20,000 (c) ₹ 10,000 **(d) ₹ 20,000**

285. A man borrowed ₹ 800 at 10% per annum simple interest and immediately lent the whole sum at 10% per annum compound interest. What does he gain at the end of 2 years?
(a) ₹ 6 **(b) ₹ 8** (c) ₹ 10 (d) ₹ 12

286. On what sum of money will the simple interest for 3 years at 8% per annum be half of the compound interest on ₹ 400 for 2 years at 10% per annum?
(a) ₹ 125 (b) ₹ 150 **(c) ₹ 175** (d) ₹ 200

287. If the compound interest on a certain sum at $16\frac{2}{3}$ % for 3years is ₹ 1,270, the simple interest on the same sum at the same rate and for the same period is:
(a) ₹ 1,200 (b) ₹ 1,165 **(c) ₹ 1,080** (d) ₹ 1,220

288. The compound interest on a certain sum at 5% per annum for 2 years is ₹ 328. The simple interest for that sum at the same rate and for the same period will be:
(a) ₹ 320 (b) ₹ 322 (c) ₹ 325 (d) ₹ 326

289. The compound interest on ₹ 5,600 for $1\frac{1}{2}$ years at 10% per annum compounded annually is:
(a) ₹ 882.70 (b) ₹ 873.50 **(c) ₹ 868** (d) ₹ 840

290. The compound interest on ₹ 20,480 at $6\frac{1}{4}$ % per annum for 2 years 73 days, is:
(a) ₹ 3,000 (b) ₹ 3,131 **(c) ₹ 2,929** (d) ₹ 3,636

291. What is the principal amount which earns ₹ 132 as compound interest for the second year at 10% per annum?
(a) ₹ 1,000 **(b) ₹ 1,200** (c) ₹ 1,320 (d) ₹ 1,188

292. A sum of money at compound interest amounts to ₹ 578.40 in 2 years and to ₹ 614.55 in 3 years. The rate of interest per annum is:
(a) 4% (b) 5% **(c) $6\frac{1}{4}$ %** (d) $8\frac{1}{3}$ %

293. A sum of money at compound interest amounts to ₹ 5,290 in 2 years and to ₹ 6,083.50 in 3 years. The rate of interest per annum is:
(a) 12% (b) 14% **(c) 15%** (d) $16\frac{2}{3}$ %

294. If the amount is $2\frac{1}{4}$ times the sum after 2 years at compound interest, the rate of interest per annum is:
(a) 25% (b) 30% (c) 40% **(d) 50%**

295. A sum of money amounts to ₹ 4,624 in 2 years and to ₹ 4,913 in 3 years at compound interest. The sum is:
(a) ₹ 4,096 (b) ₹ 4,260 (c) ₹ 4,335 (d) ₹ 4,360

296. A sum of money placed at compound interest doubles itself in 5 years. It will amount to eight times itself in:
(a) 10 years (b) 12 years **(c) 15 years** (d) 20 years

297. A sum of money at compound interest amounts to thrice itself in 3 years. In how many years will it be 9 times itself in?
(a) 12 (b) 9 **(c) 6** (d) 8

298. In how many years will a sum of ₹ 800 at 10% per annum compounded semi-annually become ₹ 926.10?

(a) $2\frac{1}{2}$ **(b) $1\frac{1}{2}$** (c) $2\frac{1}{3}$ (d) $1\frac{1}{3}$

299. The present worth of ₹ 169 due in 2 years at 4% per annum compound interest is:

(a) ₹ 150.50 (b) ₹ 154.75 **(c) ₹ 156.25** (d) ₹ 158

300. To find out the total compound interest accrued on a sum of money after 5 years, which of the following information given in the statements A and B is/are sufficient?
A: the rate of interest was 6% per annum.
B: The total simple interest on the same amount after 5 years at the same rate will be ₹ 600.

(a) Only A is sufficient (b) Either A or B is sufficient
(c) Both A & B together are needed (d) Both A & B are not sufficient

301. To find out the total compound interest accrued on a sum of money after 5 years, which of the following information given in the statements P and Q will be sufficient?
P: The sum was ₹ 20,000.
Q: The total amount of simple interest on the sum after 5 years was ₹ 4,000.

(a) Only P is sufficient (b) Only Q is sufficient
(c) Either P or Q is sufficient **(d) Both P& Q are needed**

302. The difference between compound interest and the simple interest earned on a sum of money at the end of 4 years is ₹ 256.40.
To find out the sum, which of the following information given in the statements P and Q is/are necessary?
P: Amount of simple interest accrued after 4 years.
Q: Rate of interest per annum.

(a) Only P is necessary **(b) Only Q is necessary**
(c) Either P or Q is necessary (d) Neither P nor Q is necessary

303. The difference between the compound interest and simple interest earned at the end of second year on a sum of money at 10% per annum is ₹ 20. The sum is:

(a) ₹ 4,000 **(b) ₹ 2,000** (c) ₹ 1,500 (d) Data inadequate

304. A sum of ₹ 12,000 deposited at compound interest becomes double after 5 years. After 20 years it will become:

(a) ₹ 1,20,000 **(b) ₹ 1,92,000** (c) ₹ 1,24,000 (d) ₹ 96,000

305. The least number of complete years in which a sum of money put out at 20% compound interest will be more than doubled is:

(a) 3 **(b) 4** (c) 5 (d) 6

306. A tree increases annually by $\frac{1}{8}$th of its height. By how much will it increase after 2 years, if it stands today 64 cm high?

(a) 72 cm (b) 74 cm (c) 75 cm **(d) 81 cm**

307. The difference between the compound interest and the simple interest for 2 years on a sum of money is ₹ 60. If the simple interest for 2 years be ₹ 1,440, the rate per cent is:

(a) $4\frac{1}{6}\%$ (b) $6\frac{1}{4}\%$ (c) 8% **(d) $8\frac{1}{3}\%$**

308. The compound interest on a sum for 2 years is ₹ 832 and the simple interest on the same sum for the same period is ₹ 800. The difference between the compound interest and the simple interest for 3 years will be:

(a) ₹ 48 (b) ₹ 66.56 **(c) ₹ 98.56** (d) None of these

309. **The difference between compound interest and simple interest on a sum for 2 years at 10% per annum, when the interest is compounded annually is ₹ 16. If the interest were compounded half yearly, the difference in two interests would be:**

(a) ₹ 24.81 (b) ₹ 31.61 (c) ₹ 32.40 (d) ₹ 26.90

310. **The value of $\log_{343} 7$ is:**

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

311. **The value of $\log_5 \frac{1}{125}$ is:**

(a) 3 **(b) - 3** (c) $\frac{1}{3}$ (d) - $\frac{1}{3}$

312. **The value of $\log_{\sqrt{2}} 32$ is :**

(a) $\frac{5}{2}$ (b) 5 **(c) 10** (d) $\frac{1}{10}$

313. **The value of $\log_{10}$ (.0001) is :**

(a) $\frac{1}{4}$ (b) - $\frac{1}{4}$ **(c) - 4** (d) 4

314. **The value of $\log_{(.01)}$ (.0001) is :**

(a) $\frac{1}{3}$ (b) - $\frac{1}{3}$ (c) $\frac{3}{2}$ **(d) - $\frac{3}{2}$**

315. **If $\log_3 x = -2$, then x is equal to:**

(a) - 9 (b) - 6 (c) - 8 **(d) - $\frac{1}{9}$**

316. **If $\log_8 x = \frac{2}{3}$, then the value of x is :**

(a) $\frac{3}{4}$ (b) $\frac{4}{3}$ **(c) 4** (d) 3

317. **If $\log_x \frac{1}{125} = -\frac{1}{2}$, the x is equal to:**

(a) $\frac{3}{4}$ (b) - $\frac{4}{3}$ (c) $\frac{81}{256}$ **(d) $\frac{256}{81}$**

318. **If $\log_{10000} x = -\frac{1}{4}$, then, x is equal to:**

(a) $\frac{1}{10}$ (b) $\frac{1}{100}$ (c) $\frac{1}{1000}$ (d) $\frac{1}{10000}$

319. **If $\log_x 4 = \frac{1}{4}$, then x is equal to:**

(a) 16 (b) 64 (c) 128 **(d) 256**

320. **If $\log_x (0.1) = -\frac{1}{3}$, then the value of x is:**

(a) 10 (b) 100 **(c) 1000** (d) $\frac{1}{1000}$

321. **If $\log_{32} x = 0.8$, then x is equal to:**

(a) 25.6 **(b) 16** (c) 10 (d) 12.8

322. **If $\log_4 x + \log_2 x = 6$, then x is equal to:**
(a) 2 (b) 4 (c) 8 **(d) 16**

323. **If $\log_8 x + \log_8 \frac{1}{6} = \frac{1}{3}$, then the value of x is :**
(a) 12 (b) 16 (c)18 (d) 24

324. **If log 2 = 0.30103, then the number of digits in 4^{50} is:**
(a) 30 **(b) 31** (c) 100 (d) 20

325. **If log 2 = 0.30103, then the number of digits in 5^{20} is:**
(a) 14 (b) 16 (c) 18 (d) 25

326. **The value of $\log_{(-1/3)} 81$ is equal to:**
(a) - 27 **(b) - 4** (c) 4 (d) 27

327. **The value of $\log_{2\sqrt{3}} (1728)$ is equal to:**
(a) 3 (b) 5 **(c) 6** (d) 9

328. **The value of $\log_2 (\log_5 625)$ is:**
(a) 2 (b) 5 (c) 10 (d) 15

329. **The value of $(\frac{1}{3}\log_{10} 125 - 2\log_{10} 4 + \log_{10} 32)$ is:**
(a) 0 (b) $\frac{4}{5}$ (c) 2 **(d) 1**

330. $\log \frac{a^2}{bc} + \log \frac{b^2}{ac} + \log \frac{c^2}{ab}$ **is equal to :**
(a) 0 (b) 1 (c) 2 (d) abc

331. **$(\log_b{}^a \times \log_c{}^b \times \log_a{}^c)$ is equal to:**
(a) 0 **(b) 1** (c) abc (d) a+b+c

332. $\frac{1}{\log_{xy}(xyz)} + \frac{1}{\log_{yz}(xyz)} + \frac{1}{\log_{zx}(xyz)}$ **is equal to:**
(a) 1 **(b) 2** (c) 3 (d) 4

333. $\frac{1}{(\log_a bc)+1} + \frac{1}{(\log_b ca)+1} + \frac{1}{(\log_c ab)+1}$ **is equal to:**
(a) 1 (b) 2 (c) 3 (d) $\frac{3}{2}$

334. **If $\log_2 [\log_3 (\log_2 x)] = 1$, then x is equal to:**
(a) 512 (b) 128 (c) 12 (d) 0

335. **$(\log_5 3) \times (\log_3 625)$ equals :**
(a) 1 (b) 2 (c) 3 **(d) 4**

336. **$(\log_5 5)(\log_4 9)(\log_3 2)$ is equal to :**

(a) 2 **(b) 1** (c) 5 (d) $\frac{3}{2}$

337. **If $\log_{10} 2 = 0.3010$ and $\log_{10} 3 = 0.4771$, then the value of $\log_{10} 1.5$ is**
(a) 0.7161 **(b) 0.1761** (c) 0.7116 (d) 0.7611

338. **If $\log_{10} 2 = 0.3010$, then $\log_2 10$ is:**
(a) 0.3322 (b) 3.2320 **(c) 3.3222** (d) 5

339. **The value of** $\frac{1}{\log_3 60} + \frac{1}{\log_4 60} + \frac{1}{\log_5 60}$ **is:**
(a) 0 **(b) 1** (c) 5 (d) 60

340. **Two numbers are in the ratio 3:4. If 10 is subtracted from both of them the ratio will be 1:2. So the numbers are**
(a) 15 and 20 (b)12 and 16 (c) 30 and 40 (d) None of them

341. **The mean of age of 5 men is 40 years. Three of them are of some age and they are excluded. The mean of the remaining two is 25. Age of one of the excluded person in years is:**
(a)20 (b)25 (c) 40 **(d) None of them**

342. **A man bought three qualities of tea in the ratio 5:4:3 with prices per kg. Rs. 390, Rs. 375 and Rs. 450 respectively and mixed them together. The cost price of the mixture per kg. in Rs. is:**
(a)395 (b)420 **(c) 400** (d) None of them

343. **Ram lends Hari ₹ 1,000 and Hari repays ₹1,300 to Ram at the end of 3 years in simple interest fully. The rate of interest Ram charged to Hari per annum for repayment of loan is**
(a)13% (b)12% **(c) 10%** (d)None of them

344. **A Bill of ₹ 1,020 is due in 6 months. True discount in rupees at interest rate 4% per annum is**
(a) 25 **(b) 20** (c) 20.4 (d) None of them

345. **After arranging 5, $3\sqrt{3}$, $2\sqrt{6}$ in descending order they are**
(a) $3\sqrt{3}$, 5, $2\sqrt{6}$ (b) $2\sqrt{6}$, $3\sqrt{3}$, 5 (c) $3\sqrt{3}$, $2\sqrt{6}$, 5 (d) None of them

346. **If $y \propto \frac{1}{x^3}$ and x = 2 when y = 3, then for x = 3 the value of y is:**
(a) $\frac{4}{3}$ **(b) $\frac{8}{9}$** (c) $\frac{4}{9}$ (d) None of them

347. **The number of ways in which the letters of word the COLLEGE can be arranged is** :
(a) 240 (b) 2,520 (c) 5,040 **(d) None of them**

348. **The number of digits in is (given 0.30103)**
(a) 12 (b) 11 **(c) 13** (d) None of them

349. **Correct statement among $1 \subset \{1,3,4\}, \{1,3\} \in \{1,3,4\}$ and $\{1,4\} \subset \{1,3,4\}$ is:**
(a) $1 \subset \{1,3,4\}$ **(b) $\{1,4\} \subset \{1,3,4\}$** (c) $\{1,3\} \in \{1,3,4\}$ (d) None of them

350. **The area of the triangle with sides of length 3 cm, and 5 cm, (in sq. cm) is**
(a) 12 **(b) 6** (c) 24 (d) None of them

351. **The perimeter in cm of a semicircle of diameter 14 cm is**
(a) 25 (b) 44 **(c) 36** (d) None of them

352. **The volume in cu. Ft of a right pyramid having altitude 6 ft and square base with length of a side 4 ft is**
(a) 32 (b) 96 (c) 48 (d) None of them

353. **A path of 5 ft wide is to be laid just outside round the square garden with length of a side 50 ft. the area of the path in sq. ft would be**
(a) 1000 (b) 2500 (c) 1200 **(d) None of them**

354. **The volume of a solid sphere is $\frac{32}{3}\pi$ cu. Cm. Surface area of the sphere in sq. cm is**
(a) 12 π (b) 8 π **(c) 16π** (d) None of them

355. **Equation of a line passing through (2,4) and having y-intercept 2 (on the positive side) is :**
(a) y = x - 2 **(b) y = x + 2** (c) y + x = 2 (d) None of them

356. **The coordinates of the point which divide the line joining (3, 6) and (12, 9) internally in the ratio 1:2 is**
(a) (7, 6) (b) (9,3) **(c) (6,7)** (d) None of them

357. **Perpendicular distance of the line 3x + 4y = 1 from the point (4, 1)is:**
(a) 3 units (b)4 units (c) $\frac{17}{5}$ units (d) None of them

358. **The radius of the circle $2x^2 + 2y^2 + 12y = 8x + 6$ is:**
(a) 3 units **(b)4 units** (c) 5 units (d) None of them

359. **Eccentricity of the ellipse $5x^2 + 9y^2 = 405$ is :**
(a) 2 (b) $\frac{1}{3}$ (c) $\frac{4}{9}$ **(d) None of them**

360. **If $f(X) = e^{2x-3}$: then $\frac{f(x+y)}{f(x)f(y)}$ is**
(a) e^3 (b) e^{-3} (c) 1 (d) None of them

361. **The value of $\lim_{x \to 0} \frac{3^x - 2^x}{x}$ is :**
(a) $\log_e\left(\frac{3}{2}\right)$ (b) $\log_{10}\frac{3}{2}$ (c) 1 (d) None of them

362. **If $y = 4^x$ then, $\frac{d^2y}{dx^2}$ is:**
(a) 4^x (b) $4^x \log_e 4$ (c) $\log_e 4$ **(d) None of them**

363. **The value of x for which $x(12-x^2)$ is maximum is**
(a) 0 (b) -2 **(c) 2** (d) None of them

364. **The value of $\int_0^1 \frac{e^x dx}{1+e^x}$ is:**
(a) $\log_e(1+e)$ **(b) $\log_e\left(\frac{1+e}{2}\right)$** (c) 2 (d) None of them

365. **If the total cost function $C = x^3 – 2x^2 + 5x$, then the marginal cost is equal to:**
(a) $x^2 – 4x + 5$ **(b) $3x^2 – 4x + 5$** (c) $3x^2 – 4x$ (d) None of them

366. **The arithmetic mean of first 9 counting numbers occurring with same frequency has its value:**
(a) 45 (b) 190 (c) 5 **(d) None of them**

367. **If 2 occurs 4 times, 4 occurs 3 times, 8 occurs twice and 16 occurs once then the geometric mean of them is**
(a) 4 (b) 8 (c) 2 (d) None of them

368. **If a person travels first 2 km @ 2 km/hr., next 3 km @3 km/hr and another 5 km @ 5km/hr, his average speed during this journey is:**
(a) 3 km/hr (b) $\frac{38}{10}$ km/hr **(c) $\frac{10}{3}$ km/hr** (d) None of them

369. **The median of marks 55,60,50,40,57,45,58,65,57,48 of 10 students is**
(a) 55 (b) 57 (c) 52.5 **(d) None of them**

370. **If the relation between two variables x and y is 3x – 2y = 5 and mode of x is 5 then mode of y is:**
(a) 5 (b) 7.5 (c)10 (d) None of them

371. **If a, b, c, d, e are five consecutive odd numbers, their average is:**
(a) $\frac{8}{3}$ (b) 4 **(c) 6** (d) None of them

372. **If $\sum_{i=1}^{10}(x_i - 3) = 10$ and $\sum_{i=1}^{10}(x_i - 3)^2 = 100$ then standard deviation of 10 observations $x_1, x_2, \ldots\ldots\ldots\ldots, x_{10}$ is :**
(a) 9 **(b) 3** (c) 10 (d) None of them

373. **If the relation between two variables x and y is 2x + 3y = 5 and standard deviation of y is 10 then the standard deviation of x is:**
(a) 15 (b) 10 (c) $\frac{25}{2}$ (d) None of them

374. **If mean, mode and standard deviation of 10 observations are 65, 80 and 25 respectively then type of skewness of the data is**
(a) Symmetric (b) Positively skewed **(c) Negatively Skewed** (d) None of them

375. **If the mean of 50 observations is 50 and one observation 94 is wrongly recorded there as 49 then correct mean will be**
(a) 49.1 (b) 50 **(c) 50.9** (d) None of them

376. **If for two observations arithmetic mean is 80 and harmonic mean is 5 then geometric mean of them is**
(a) 20 (b) 400 (c) 16 (d) None of them

377. **For moderately skewed distribution A.M. = 110, Mode = 104, then median is:**
(a) 112 **(b) 108** (c) 104 (d) None of them

378. **If the maximum and minimum values of 10 observations are 40 and 10 then coefficient of range is:**
(a) $\frac{5}{3}$ **(b) $\frac{3}{5}$** (c) 30 (d) None of them

379. **The standard deviation (SD) of a variable x is 10, then the SD of the variable 2x + 10 is:**
(a) 10 (b) - 10 **(c) 20** (d) None of them

380. **The number to be added to each term of the ratio 3:7 to make it 1:2 is:**
(a) 2 **(b) 1** (c) 3 (d) None of these

381. **The average of 7 numbers is 27. If one number is included, the average becomes 25. The included number is**
(a) 11 (b) 10 (c) 12 (d) None of these

382. **The time in which a sum of money becomes double at 10% p.a., simple interest is**
(a) 8 years **(b) 10 years** (c) 12 years (d) None of these

383. **If $x = 2 + \sqrt{3}$ then the value of $x^4 + \frac{1}{x^4}$ is :**
(a) 98 (b) 196 **(c) 194** (d) None of these

384. **${}^nC_r + {}^nC_{r-1}$ is equal to**
(a) ${}^{n-1}C_r$ **(b) ${}^{n+1}C_r$** (c) ${}^nC_{r+1}$ (d) None of these

385. **Given a varies as bx + c. Value of a is 3 when b = 1, c = 2 and is 5 when b = 2, c = 3. The value of x would be**
(a) -1 (b) 2 (c) 3 **(d) None of these**

386. **If one root of the equation $x^2 - bx + K = 0$ is twice the other root then the value of K is**
(a) - 8 **(b) 8** (c) 4 (d) None of these

387. **If $\frac{\log x}{y-z} = \frac{\log y}{z-x} = \frac{\log z}{x-y}$ then the value of xyz is:**
(a) 1 (b) 0 (c) -1 (d) None of these

388. **If two adjacent sides of right angle of a right-angled triangle are such that the length of one side is twice the other and the hypotenuse is 5 cm then area of the triangle is sq. cm. is :**
(a) 10 **(b) 5** (c) 2.5 (d) None of these

389. **If the parameter of a semicircle is 36 cm then area of that semicircle is sq. cm. is (Given) $\pi = \frac{22}{7}$**
(a)144 (b) 22 **(c)77** (d) None of these

390. **Surface of a cube of volume 125 cu. ft. are painted with black colour at cost of ₹ 10 per sq. ft. The amount required to paint the outer surfaces of the cube in ₹ is**
(a) 1,500 (b) 1,250 (c) 1,000 (d) None of these

391. **If 3 solid spheres of radii 3 ft., 4 ft., and 5 ft., of iron are melted to form a new sphere, the surface area of the new sphere in square feet is (Given) $\pi = \frac{22}{7}$**
(a) $\frac{264}{7}$ (b) $\frac{528}{7}$ (c) $\frac{792}{7}$ **(d) None of these**

392. **A right pyramid stands on a base of 12 cm square and its height is 8 cm. then its total surface area in sq. cm is**
(a) 240 **(b) 384** (c) 624 (d) None of these

393. **The area of the triangle formed by points (0, 0), (5, 0) and (0, 6) is :**
(a) 11 sq. unit (b) 30 sq. unit **(c) 15 sq. unit** (d) 7.5 sq. unit

394. **The equation of a straight line passing through the point (5,5) and is perpendicular to the line x = y is**
(a) x – y = 5 (b) x + y = 5 **(c) x + y = 10** (d) None of these

395. **A point P having coordinate (x, y) moves such that its distance from the points (1, 3) and (2, -3) is equal. Then locus of P is**
(a) 2x = 12y + 3 (b) 2x = 6y - 3 (c) 6x = y + 3 (d) None of these

396. **The directrix of the parabola $x^2 = 4x + 3y + 5$ is**
(a) 4y = 15 **(b) 4y + 15 = 0** (c) 4x + 15 = 0 (d) None of these

397. **If $h = g(x) = \frac{px+q}{rx-p}$ then g(h) is equal to**

(a) q **(b) x** (c) p (d) None of these

398. $\lim_{x \to 0} \frac{e^{px} - e^{qx}}{x}$ **is evaluated as**

(a) q - p (b) $\frac{p}{q}$ **(c) p - q** (d) None of these

399. **If** $y = x\sqrt{1+x^2}$ **then** $\frac{dy}{dx}$ **is x =** $\sqrt{3}$

(a) $\frac{1}{2}$ **(b)** $\frac{7}{2}$ (c) 5 (d) None of these

400. $\int_0^1 \frac{dx}{\sqrt{x+1}\ \sqrt{x}}$ **is evaluated as**

(a) $\frac{2\sqrt{2}}{3}$ **(b)** $\frac{4\sqrt{2}}{3}$ (c) $\frac{2}{3}(2\sqrt{2}+1)$ (d) None of these

401. **f f(x, y) =** $3x^3 - 5x^2y + 2y^3$ **then** $\times \frac{\partial f}{\partial x} + \frac{\partial f}{\partial y}$ **is**

(a) f(x,y) (b) 3 **(c) 3f(x,y)** (d) None of these

402. **First 10 odd counting numbers each occurring twice has arithmetic mean**

(a) 40 **(b) 10** (c) 20 (d) None of these

403. **Geometric mean (G.M.) of six numbers is 16. If G.M. of first four of them is 8 then G.M. of other two is**

(a) 8 (b) 16 (c) 32 **(d) None of these**

404. **Two positive observations have arithmetic mean 3 and geometric mean** $2\sqrt{2}$ **. If each observation is multiplied by 2 then harmonic mean will be**

(a) $\frac{16}{3}$ (b) $\frac{8}{3}$ (c) 12 (d) None of these

405. **If the sum of deviations of a number of observations about 4 and that about 3 are 40 and 50 respectively then arithmetic mean of the observations is**

(a) 4 (b) 6 (c) 10 **(d) None of these**

406. **If the relation between 2 variables x and y is xy = 2 and arithmetic mean of variable x is 10, then harmonic mean of variable y is**

(a) $\frac{1}{5}$ (b) $\frac{1}{10}$ (c) $\frac{2}{5}$ (d) None of these

407. **If the variable x takes 20 values** $x_1, x_2, \ldots, x_{10}, -x_1, -x_2, \ldots, -x_{10}$ **such that** $\sum_{i=1}^{10} x_i^2 = 40$ **then standard deviation of x is**

(a) 1 **(b) 2** (c) 4 (d) None of these

408. **If relation between 2 variables x and y is 2x + 3y = 5 and mean deviation of x values about mean is 9 for 10 observations then sum of absolute deviations of corresponding 10 y-values about mean is**

(a) 90 (b) 30 (c) 6 **(d) None of these**

409. **If for 10 values of x sum of deviations about 5 is 10 and sum of squares of deviations about 4 is 100 then variance of x is**

(a) 4 **(b) 6** (c) 10 (d) None of these

410. If two samples of sizes 4 and 5 have same mean but different standard deviations 1 and 3 respectively then the standard deviation of the combined sample is

(a) $\sqrt{5}$ (b) $\frac{\sqrt{51}}{3}$ **(c) $\frac{7}{3}$** (d) None of these

411. If the mode, variance and coefficient of skewness of a frequency distribution are 100, 16 and 6 respectively then mean of the distribution is

(a) 124 (b) 76 (c) 108 (d) None of these

412. If P = $\frac{4}{5}$ and Q = $2\frac{1}{2}$ R, then P : R is

(a) 1 : 2 **(b) 2 : 1** (c) 4 : 5 (d) None of these

413. A person drove his car 40 km at an average speed of 20 km per hour and next 60 km at an average speed of 30 km per hour. Then his average speed in his whole journey of 100 km is

(a) 25 km/h (b) 20 km/h (c) 30 km/h (d) None of these

414. Time in which ₹5000 will be the amount ₹6000 at simple interest @5% p.a. is

(a) 2 years (b) 5 years **(c) 4 years** (d) None of these

415. The number of ways in which letters of the word 'ALGEBRA' can be arranged so that the two A's will not remain together is

(a)1600 **(b) 1800** (c) 2000 (d) None of these

416. Let p be 'It is hot' and q be 'It is dry'. Then the statement 'It is not hot and it is not dry' can be written in symbolic form as

(a) ~ p v q **(b) ~ p^ ~ q** (c) ~ p v q (d) p v q

417. The number of zeros between decimal point and the first significant digit in $(0.5)^{20}$, given $\log_{10}2 = 0.30103$, is

(a) 8 (b) 7 (c) 5 **(d) none of these**

418. If A = {1,3,5}, B = {1,3,6}, $\cup$ = { 1,2,3,4,5,6} then the set (A – B) $\cap$ B^c equals to

(a){ 1} **(b) { 5 }** (c) {1, 5} (d) none of these

419. If $X^a = Y^b = Z^c$ and xyz = 1 then the value of $\frac{1}{a}+\frac{1}{b}+\frac{1}{c}$ is

(a)1 (b) 3 **(c) 0** (d) $\frac{1}{5}$

420. The length, breadth and heigh of a box are 12 m, 4 m and 3 m respectively. The length of the rod that can be placed in the box is

(a)15m **(b) 13m** (c) 12m (d) None of these

421. If the hypotenuse of a right angled isosceles triangle is 4 cm then the area of the triangle is

(a) 12 sq.cm (b) 8 sq. cm **(c) 4 sq.cm** (d) None of these

422. The diameter of a sphere is 6 cm. The surface area of its hemisphere is

(a)27 sq.cm **(b) 27 π sq.cm** (c) 18 π sq.cm (d) None of these

423. A right prism has a triangular base whose sides are respectively 14 cm, 21 cm and 21 cm. If the altitude of the prism is $10\sqrt{2}$ cm then volume of the prism is

(a) 1200cc (b) 1134 cc (c) 1000 cc **(d) None of these**

424. The curved surface of a right circular cone having diameter 6 cm and height 4 cm is

(a) 10 π sq.cm (b) 25 π sq.cm **(c) 15 π sq.cm** (d) None of these

425. **If the point (x, o) is equidistant from the points (-1, 3) and (6, 4) then value of x is**
(a) 1 **(b) 3** (c) 4 (d) None of these

426. **The equation of a circle with (1, 0) and (0, 1) as end points of its diameter is**
(a) $x^2 + y^2 - x - y = 0$ (b) $x^2 + y^2 - 2x - 2y = 0$ (c) $x^2 + y^2 - 2x - 2y + 1 = 0$ (d) None of these

427. **Focus of the parabola $x^2 + 8y - 6x + 1 = 0$ is**
(a) (0. -2) (b) (-1, 3) **(c) (3, -1)** (d) None of these

428. **The eccentricity of the ellipse $x^2 + 4y^2 - 2x + 8y + 1 = 0$ is**
(a) $\frac{1}{2}$ **(b)** $\frac{\sqrt{3}}{2}$ (c) $\frac{\sqrt{3}}{4}$ (d) None of these

429. **If f (x) = $\frac{1 \times 1}{x}$ then for c ≠ 0, $|f(c) - f(-c)|$ will be**
(a) 1 **(b) 2** (c) 0 (d) None of these

430. **The value of** $\lim_{x \to 0} \frac{1-\sqrt{1-x^2}}{x^2}$
(a) $\frac{1}{2}$ (b) $\frac{1}{3}$ (c) 0 (d) None of these

431. **When $x = 4t - t^2$, $y = t^2 + 3$, $\frac{dy}{dx}$ at t = 1 is**
(a) 0 (b) -1 (c) 2 **(d) None of these**

432. **The value of** $\int_0^1 \frac{dx}{\sqrt{x+1-\sqrt{x}}}$ **is**
(a) $\frac{4\sqrt{2}}{3}$ (b) $3\sqrt{2}$ (c) $\frac{2\sqrt{2}}{3}$ (d) None of these

433. **If $f(x, y) = 2x^3 - 11x^2y + 3y^3$ then $x\frac{\partial f}{\partial X} + y\frac{\partial f}{\partial y}$ is**
(a) 2 **(b) 3** (c) 4 (d) None of these

434. **If the relation between x and y is x = 2y + 5 and the median of x is 25 then the median of y is**
(a) 20 **(b) 10** (c) 12.5 (d) None of these

435. **Geometric mean of 10 observations is 8. If geometric mean of first six observations is 4 then geometric is mean of last four observations is**
(a) $16\sqrt{2}$ (b) 8 (c) 16 (d) None of these

436. **If harmonic mean of first 5 observations is 5/2 and harmonic mean of another 5 observations is the harmonic mean of all 10 observations is**
(a) 7 **(b)** $\frac{45}{14}$ (c) $\frac{101}{36}$ (d) None of these

437. **Out of 100 observations 25 observations have the value 1 and rest of the observations are zero. The standard deviation of 100 observations is**
(a) $\frac{\sqrt{3}}{2}$ (b) $\frac{3}{2}$ **(c)** $\frac{\sqrt{3}}{4}$ (d) None of these

438. **If the sum of deviations of a number of observations about 4 is 30 and that about 3 is 40. Then mean of the observations is**
(a) 7 (b) 10 (c) 11 (d) None of these

439. **Variance of first 5 positive integers is**
(a) 3 **(b) 2** (c) 1 (d) None of these

440. **Mean deviation of first 5 positive integers about median is:**
(a) 0 (b) 1.7 **(c) 1.2** (d) None of these

441. **The mean and variance of n values of a variable x are σ^2 and respectively. If the variable y = x^2, the mean of y is**
(a) σ **(b) σ^2** (c) 1 (d) None of these

442. **For 5 values of a variable x, $\sum_{1-1}^{5} x_1 (x_1 - 5)^2 = 30$, the variance of x is**
(a) 2 (b) 4 **(c) 6** (d) None of these

443. **If group G_1 has a.m = 20, mode = 25, s.d = 10 and group G_2 has a.m = 18, median = 18, s.d = 9 then**
(a) G_1 is more skewed than G_2 **(b) G_1 is less skewed than G_2**
(c) G_1 and G_2 are equally skewed (d) None of these

444. **If 2 – x, 3 – x, 5 – x and 7 – x are proportion, then the value of x is**
(a) 1 **(b) -1** (c) 2 (d) None of these

445. **The average of 10 numbers is 21. If an additional number is included the average becomes 20, the additional number is**
(a) 10 (b) 5 (c) 3 (d) None of these

446. **True discount of a bill value due in 2 years at 4% per annum. Simple interest is ₹ 40. Then bill value is**
(a) ₹ 540 (b) ₹ 500 (c) ₹ 460 (d) None of these

447. **The number of the ways in which 9 different things can be divided into 3 groups containing 2,3 and 4 things respectively is**
(a) 15120 **(b) 1260** (c) 630 (d) None of these

448. **If x + iy = $\frac{1}{3+2i}$ the value of x - y is**
(a) $\frac{1}{3}$ (b) $\frac{1}{\sqrt{14}}$ (c) $\frac{1}{5}$ **(d) None of these**

449. **If c varies directly as x + b, c = 8 when b = 2 and c = 10 when b = 3 then value of x is**
(a) 0 (b) 1 **(c) 2** (d) None of these

450. **The logarithm of 324 to the based $\frac{1}{3\sqrt{2}}$ is**
(a) -4 (b) -2 (c) 4 (d) None of these

451. **Let p be "the student is a girl" and q be "the student is studious". Then the symbolic form of the statement "the student is a boy but he is not studies is**
(a) p^~q (b) ~p^q **(c) ~p^~q** (d) None of these

452. **The perimeter of a rectangle, having area 18 sq cm and its length being twice its breadth, is**
(a) 9 cm **(b) 18 cm** (c) 24 cm (d) None of these

453. **If the perimeter of a semicircle is 36 cm then area of the semicircle is (take π = 22/7)**
(a) 77 sq cm (b) 154 sq cm (c) 38.5 sq cm (d) None of these

454. **If the diameter of the base of a cylinder is equal to its height and its volume is 2156 cc, its whole surface is (take π = 22/7)**
(a) 920 sq cm (b) 900 sq cm **(c) 924 sq cm** (d) None of these

455. **The radius of a sphere is 3 cm. It is melted and drawn into a wire of diameter 0.2 cm. Then length of the wire (in cm) is**
(a) 3400 (b) 3500 **(c) 3600** (d) None of these

456. **Three sides of a cuboid are 18, 37.5 and 40 cm. Then the edge of that cube whose volume is equal to this cuboid is**
(a) 30 cm (b) 35 cm (c) 40 cm (d) None of these

457. **If X (2, a), Y (3, -1) and Z (4, -5) collinear then a is**
(a) 1 (b) 2 **(c) 3** (d) None of these

458. **A line passing through (1, 3) and perpendicular to the line 2x – 3y = 7 is**
(a) 2y + 3x = 11 (b) 3y = 2x + 7 **(c) 2y + 3x = 9** (d) None of these

459. **The length of intercept of the circle $x^2 + y^2 – 2x – 10y + 22 = 0$ on the line x = 1 is**
(a) 2 unit **(b) 4 unit** (c) 6 unit (d) None of these

460. **For the parabola $y^2 = 4x$ intersecting the line y + 4 = 2x, the length of the chord thus formed is**
(a) $\sqrt{5}$ unit (b) $2\sqrt{5}$ unit **(c) $3\sqrt{5}$ unit** (d) None of these

461. **If $y = f(x) = \frac{ax+b}{cx-a}$ then for $x \neq \frac{a}{c}$, f(y) is**
(a) x (b) - x (c) $\frac{1}{x}$ (d) None of these

462. **The value $\lim_{x \to \infty} \frac{4x^2+3x-1}{2x^2+7x+5}$ is**
(a) 2 (b) $\frac{1}{2}$ (c) Does not exist (d) None of these

463. **If $y = x^x$ then $\frac{dy}{dx}$ is**
(a) x log x (b) x (1+log x) **(c) x^x (1 + log x)** (d) None of these

464. **The value of $\int_0^1 \frac{dx}{x+\sqrt{x}}$ is**
(a) $\log_e 2$ **(b) $2\log_e 2$** (c) $-\log_e 2$ (d) None of these

465. **If $u = x^2y + y^2z + z^2x$ then $u_x + u_y + u_z$ is**
(a) (x+y+z) **(b) $(x+y+z)^2$** (c) $(x^2+y^2+z^2)$ (d) None of these

466. **If 1, 2, 3, 4 occur with respective frequencies 1,2,3,4 then their arithmetic mean is**
(a) 7.5 (b) 2.5 **(c) 3** (d) None of these

467. **In a group of 150 observations the arithmetic mean is 60 and arithmetic mean of first 100 observations of the group is 50. Then arithmetic mean of the remaining observations of the group is**
(a) 80 (b) 60 (c) 50 (d) None of these

468. **If the observations 2,4,8 and 16 occur 8,6,4 and 2 times respectively then the geometric mean of the observations is**

(a) 8 (b) $4\sqrt{2}$ **(c) 4** (d) None of these

469. **If the arithmetic mean of 10 observations x1, x2, ……., x10 is 20 harmonic mean of 10 observations $\frac{10}{x_1}, \frac{10}{x_2}, \ldots\ldots\ldots, \frac{10}{x_{10}}$ is**

(a) 2 **(b) $\frac{1}{2}$** (c) $\frac{1}{20}$ (d) None of these

470. **If the variables x and y are related by 3x – 2y + 6 = 0 and the range of x is 10 then range of y is**

(a) 18 **(b) 15** (c) 12 (d) None of these

471. **If sum of deviation of 4 values about 2 is 4 and standard deviation of those 4 values is 2 then sum of squares of the 4 observations is**

(a) 52 (b) 40 (c) 20 (d) None of these

472. **Mean deviation about mean of first 6 positive integers is**

(a) 3.5 (b)2.5 **(c) 1.5** (d) None of these

473. **The media of the following distribution**

X	:	1	2	3	4
Frequency	:	7	12	18	4

(a) 2 **(b) 3** (c) 4 (d) None of these

474. **If the mean and coefficient of valuation of x are 10 and 50% respectively, then the standard deviation of 3 – 2x is**

(a) 100 (b) 50 **(c) 10** (d) None of these

475. **If the coefficient of skewness, mean and variance of a set of values are -3, 40 and 4 respectively then media of the values is**

(a) 46 **(b) 42** (c) 41 (d) None of these

476. **If $X^2+6X = -9$, then the roots of the equations are……..**

(a) (-3,-3) (b) (-3,3) (c) (2,4) (d)(4.2)

477. **$X^2+X=12$, then the roots of the equations are……..**

(a) (3,4) **(b) (-4,3)** (c) 2,3) (d)(4.3)

478. **$3X^2+6X+3 =0$, then the roots of the equations are……..**

(a) (3,3) **(b) (-1,-1)** (c) (2,4) (d)(4.1)

479. **If $4X^2-8X+3= 0$, when X=1/2Y, find the value of Y……**

(a) (3) (b) (-1) **(c) (3/2)** (d) (2)

480. **$16X^2-8X+1= 0$, when X= $\frac{1}{4}$ Y. Find the value of Y……**

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

481. **If the roots of the equations $2X^2+8X+C = 0$, are equal then C is equal to ……**

(a) (8) (b) (6) (c) (5) (d) (4)

482. **If the roots of the equation $X^2+6X+C = 0$, are equal then C is equal to …….**

(a) (7) (b) (6) **(c) 9** (d) (3)

483. **If the roots of the equation $3/4X^2+9X+C^3=0$, are equal then C is equal to ……**

(a) (5) **(b) (3)** (c) (8) (d) (5)

484. **If (1- $\sqrt{2}$) is one of the roots of an equation, the equation is …….**

(a) $X^2-2X-X=0$ **(b) $X^2-2X-1 = 0$** (c) $X^2-4X-2 = 0$ (d) $X^2-3X-X=0$

485. **If (2 + $\sqrt{3}$) is one of the roots of an equation, the equation is ……**

(a) X^2-2X-3 = 0 (b) X^2-2X-2=0 **(c) X^2-4X+1=0** (d) X^2-3X-5=0

486. **If (3- $\sqrt{3}$) is one of the roots of an equation, the equation is ……**
(a) X^2-2X-3 = 0 (b) X^2-3X-1=0 (c) X^2-4X+2=0 **(d) X^2-6X+6=0**

487. **If (1- $\sqrt{5}$) is one of the roots of an equation, the equation is ……**
(a) X^2-2X-4 = 0 (b) X^2-2X+4 = 0 (c) X^2-4X-1 = 0 (d) X^2-3X-2 = 0

488. **The g.c.d of the equation =$2X^2$-X-1 and $4X^2$+8X+3 is ……**
(a) (2x+1) (b) (2x-1) (c) (3x+1) (d) (2x-2)

489. **If A = (x+1)/(x-1), then A-1/A is equal to ……**
(a) (2x-3) **(b) 4x/(x^2-1)** (c) 2x/3-5 (d) X/3+3

490. **---------- is the quadratic equation whose roots are 2+5 and 2- $\sqrt{5}$**
(a) X^2-4X-1=0 (b) $2X^2$-4X=1 (c) X^2-2X-1=0 (d) $2X^2$-2X-1=0

491. **If 3X+2Y=6; (k+1)x+4y=(2k+2),if k is ---------- the equation will have infinite solution**
(a) 3 **(b) 5** (c) 4 (d) 6

492. **The method of the prime numbers between 20-50 is ……**
(a) 32 (b) 35 **(c) 37** (d) 39

493. **If $\sqrt{X}$ +1/ $\sqrt{X}$ -1+$\sqrt{X}$ -1 /$\sqrt{X}$ +1=1/3, then the value of X is……**
(a) (1,2/3) **(b) (5/3,-1)** (c) (2/3,-2) (d) (2/5,-1/3)

494. **If $\sqrt{X}$ /X-1+ $\sqrt{X}$ +1/X=7/5, then X is equal to ……**
(a) (4/3,3/2) (b) (1/3,2/3) (c) (3/5,2/5) (d) (3/5,5/7)

495. **If one root of the equation X^2-8X+M=0, exceeds the other by 2, then the value of M is equal to ……**
(a) 12 **(b) 15** (c) 10 (d) 16

496. **If one root of the equation X^2-9X+M=0, exceeds the other by3, then the value of M is equal to ……**
(a) 8 (b) 10 (c) 12 **(d) 18**

497. **If one root of the equation X^2-3X-M=0, exceeds the other by 7, then the value of M is equal to ……**
(a)8 (b) 11 (c) 12 **(d) 10**

498. **If one root of the equation X^2–7X+M=o, exceeds the other by 1, then the value of M is equal to ……**
(a) 9 (b) 10 **(c) 12** (d) 18

499. **If one root of the equation X^2-3X+M=0, exceeds the other by 5, then the value of M is equal to ……**
(a) -6 **(b) -4** (c) 12 (d) 18

500. **If one root of the equation X^2+9X+M=0, is double the other, then the value of M is equal to ……**
(a) -6 (b) 7 (c) 12 **(d) 18**

501. **If the equations X^2+7X+12=0 and X^2+MX+5=0 have common roots, the value of M is equal to ……**
(a) (21/4,14/3) (b) (21,15/4) (c) 18/7,13/5 (d) 13/2,14/3

502. **If the equations X^2+2X-3=0 and X^2+MX+2=0 have common roots, the value of M is equal to ……**
(a) (1/4,4/3) (b) (11/3,15/4) **(c) 7/3,-3** (d)13/2,14/3

503. **If the equations $X^2-5X+6=0$ and $X^2+mX+3=0$ have common roots, the value of m is equal to .....**
(a) (1/4,4/3) (b) (7/3,1/4) (c) (7/4,-3/5) **(d) (-7/2,-4)**

504. **The roots of the equation $X^2-X-6=0$,are .....**
(a) (3,-2) (b) (-3,2) (c) (1,5) (d) (5,-1)

505. **The roots of the equation $X^2+X-20=0$, are.....**
(a) (3,-6) (b) (-4,-5) (c) (2,5) **(d) (4,-5)**

506. **The roots of the equation (x+1)(x-2)(x+4) are------**
(a) (-1,2,-4) (b) (1,-2,-4) (c) (-1,-2,-4) (d) (2,-3,-4)

507. **The roots of the equation (x+2)(-2)(x-4) are------**
(a) (-2,2,4) (b) (1,-2,-4) (c) (-1,-2,-4) (d) (2,-3,-4)

508. **The roots of the equation $(x+2)^2(x-2)(x-4)$ are ----------**
(a) (-2,-2,2,4) (b) (1,-2,-2,-4) (c) (-1,-2,-2,-4) (d) (2,2,-3,-4)

509. **Find the least +iv value of M for which the equation X^2+MX+9 has real root ---------**
(a) (4) (b) (5) (c) (3) **(d) (6)**

510. **Find the least +iv value of M for which the equation X^2+MX+4 has real root ---------**
(a) (2) (b) (3) **(c) (4)** (d) (-4)

511. **The roots of the equation $(x-4)^2(x-2)(x+4)$ are ----------**
(a) (-2,2,2,4) (b) (1,-2,4,-4) **(c) (4,4,2,-4)** d) (2,-3,1,-4)

512. **The roots of the equation (x-3)(x-2)(x-4) are ----------**
(a) (-2,2,4) **(b) (3,2,4)** (c) (-1,-0,-4) (d) (2,-1,-3)

513. **Find the value of M if one root of the equation $F(x) = mx^2+2x-3=0$, is 2------**
(a) 1 **(b) -1/4** (c) -1 (d) ¼

514. **Find the value of M, if one root is 2, $F(x) = 2x^2+mx-6=0$---**
(a) 1 **(b) -1** (c) 2 (d) -2

515. **The roots of the equation $(x-3)(x-2)^2(x-4)$ are ----------**
(a) (3,2,2,4) (b) (1,-2,2,-4) (c) (-1,-2,2,-4) (d) (2,-3,2,-4)

516. **The value of M for which the difference between the roots of the equation $x^2+mx+8=0$, is 2 are----**
(a) ±2 (b)±5 **(c) ±6** (d)±3

517. **Find the degree of the equation $3x+yz^2+3Y^3$**
(a) 2 **(b) 3** (c) 4 (d) 5

518. **Find the degree of the equation $3x^5+xyz^2+y^3$**
(a) 2 (b) 3 (c) 4 **(d) 5**

519. **Find the zero's $x^2+ 7x + 12=0$**
(a) (4,-3) (b) (-4,3) **(c) (-4,-3)** (d) (4,3)

520. **Find the zero's of $=x^2-8x-12=0$**
(a) (-2,6) (b) (-6,2) **(c) (2,6)** (d) (-2,-6)

521. **Find the degree of the equation $4x^2 + xyz^2 + xy^3 + yz^5$**
(a) 2 (b)3 (c) 4 **(d) 6**

522. **If P,Q are the roots of the equation $F(x) = 6x^2 + x - 2$, find the value of P/Q-Q/P**
(a) 1/25 (b) 25/16 (c) 16/25 **(d) -7/25**

523. **If P and Q are the roots of equation $F(x) = 6x^2 + x - 2$, Find the value of p/q+q/p**
(a) -1 (b) 25/16 **(c) -25/16** (d) 16/25

524. **Find the degree of the equation $x^2 + xyz^2 + xy^3 + zy^5$**
(a) 2 (b) 3 (c) 4 **(d) 6**

525. **If p,q are zero of the equation $F(x)= x^2+x+1$ then 1/p+1/q=0**
(a) 2 **(b) -1** (c) 1 (d) -2

526. **On addition of 3 to the numerator of a fraction it becomes equal to 1, however if 2 is deducted from the denominator and 1 added to the numerator, the number becomes equal to 1. The number is……..**
(a) 6/9 (b) 3/10 (c) 5/8 (d) 11/15

527. **On deduction of 1 from the numerator of a fraction it becomes equal to 2/3, however if 2 is deducted from the denominator it becomes equal to 1. The number is……..**
(a) 5/9 **(b) 7/9** (c) 7/8 (d) 3/5

528. **If 2 is added to numerator and deducted from the denominator it becomes equal to 1, on the other hand if 3 is added to denominator and 3 is added to numerator it becomes equal to 1/3. The number is ……**
(a) 4/9 (b) 7/10 **(c) 8/12** (d) 9/15

529. **If the numerator is multiplied by 3 it becomes equal to 1, however if 2 is deducted from denominator it becomes equal to 1. The number is ……..**
(a) 5/7 (b) 3/7 (c) 5/8 **(d) 1/3**

530. **The monthly income of two friends X and Y is in the ratio of 3:2 and their expenses are in the ratio of 8:5. If both of them save ₹100 PM, their monthly income is**
(a) (₹900, 600) (b) (700, 600) (c) (575, 725) (d) (750, 960)

531. **If the monthly earning of two workers X and Y is in the ratio of 5;6 and their savings in the ratio of 8:5 (expenses being equal). Their monthly earning will be……**
(a) (₹900,700) (b) (750,580) **(c) (₹1,000 , ₹1,200)** (d) (750,960)

532. **If the monthly sales of two companies X and Y are in the ratio of 2:3 and their operating expenses in the ratio of 5:8. If both makes an operating profit of ₹10,000 PM, their sales will be……..**
(a) (₹69,000 , 70,000) (b) (75,000, 65,800) **(c) (₹60,000, ₹90,000)** (d) (54,750, 45,960)

533. **The age of the father 3 years ago was 2.5 times of his son's age and after 7 years it will be twice the age of his son, the present age of the father and son is……..**
(a) 53,23 (b) 50,27 (c) 58,30 (d) 61,32

534. **X as Y and Z as his son and grandson. His present age is 1.5 times the age of his son and grandson. 10 years ago his age was twice the age of his son and grandson, the present age of the father and sum of age of son and grand-son are**
(a) 93,63 (b) 85,57 (c) 88,64 **(d) 90,60**

535. **The age of a father 5 years ago was twice the age of his son, five years from today his age will be 25 more than the age of his son. The present age of the father and son is……**
(a) 55,30 (b) 54,27 (c) 58,30 (d) 60,30

536. **The age of X is 1.5 times the age of his wife Y. 10 years before his age would have been twice the age of his wife. Their present age is……**
(a) 53,43 (b) 50,37 **(c) 30,20** (d) 45,30

537. **A two digit number is 7 times the sum of its digit, however if 27 is deducted from it the digits are reversed. The number is ……**
(a) 63 (b) 65 (c) 75 (d) 69

538. **A two digit number is 9 times the sum of its digit, however if 9 is added to it becomes 10 times the sum of digits. The number is……..**
(a) 68 (b) 55 **(c) 81** (d) 59

539. **A two digit number is 6 times the sum of its digit, however if 9 is deducted from it the digits are reversed. The number is ……..**
(a) 61 **(b) 54** (c) 65 (d) 69

540. **A two digit number is 9 times the sum of its digit, however if 9 is deducted from it becomes 8 times the sum of the digits. The number is …….**
(a) 63 (b) 69 (c) 77 **(d) 81**

541. **Two numbers are such that if the smaller is doubled it is short by 18 from the double of the another number. If 1/5 of the smaller is added to 1/8 of the greater it added up to 19. The numbers are……..**
(a) (55,64) (b) (76,57) (c) (55,44) (d) (65,87)

542. **Two numbers are such that $1/4^{th}$ of the smaller is equal to $1/5^{th}$ of the greater and on doubling the smaller it becomes 22 less than the double of the greater. The numbers are……..**
(a) (65,60) (b) (76,50) **(c) (55,44)** (d) (65,80)

543. **Two numbers are such that twice the bigger is equal to 2.5 times the smaller. The numbers are…….**
(a) (20,35) (b) (36,57) **(c) (50,40)** (d) (62,83)

544. **Two numbers are such that if the smaller is doubled it is short by 12 from the double of the another number. If 1/3 of the smaller is equal to 1/5 of the greater number. The numbers are …….**
(a) (51,60) (b) (46,57) **(c) (36,60)** (d) (25,37)

545. **Two numbers are such that if the smaller is doubled it is 2/3 of the other one. The numbers are……..**
(a) (2,4) **(b) (2,6)** (c) (3,8) (d) (5,12)

546. **A two digit number is such that if the digits are reversed, the greater is ¾ times more than the smaller. The number is …….**
(a) (12) (b) (32) (c) (41) (d) (23)

547. **If the sum of two natural number is 9 and sum of their square is 53. The numbers are …….**
(a) (2,7) (b) (3,6) (c) (3,7) (d) (4,5)

548. **If the difference of two numbers is 5 and difference of their square is 45. The numbers are……..**
(a) (13,8) (b) (12,7) **(c) (2,7)** (d) (14,9)

549. **If the sum of two natural numbers is 9 and sum of their square is 5 times their sum less 4. The numbers are……..**
(a) (2,7) (b) (1,9) (c) (3,6) **(d) (4,5)**

550. **Two numbers are such that their sum is 19 and their product is 8 times the greater number. The numbers are…….**
(a) (12,7) **(b) (11,8)** (c) (13,6) (d) (14,5)

551. **Two numbers are such that their difference is 5 and their product is 100 times difference. The numbers are…….**
(a) (12,7) (b) (11,6) (c) (13,18) **(d) (20,25)**

552. **Two numbers are such that their sum is 15 and their difference is 1/5 of their total. The numbers are……..**
(a) (12,3) (b) (11,4) **(c) (9,6)** (d) (14,1)

553. **Two numbers are such that their difference is 24 and product is 180. The numbers are …….**
(a) (30,6) (b) (4,30) (c) (15,39) (d) (1,25)

554. **3 times of a number is equal to 3/5 of its square. The number is……..**

(a) (8) (b) (7) (c) (9) **(d) (5)**

555. **5 times of a number is 14 less than its square. The number is ……..**
(a) (7) (b) (9) (c) (13) (d) (18)

556. **If 50 is divided into two parts in such a way that 1/8 of the greater number equals 1/2of the smaller. The number are…….**
(a) (40,10) (b) (30,20) (c) (32,18) (d) (33,17)

557. **If 60 is divided into two parts such that their product is 15 times their sum. The numbers are ……**
(a) (30,30) (b) (20,40) (c) (10,50) (d) (25,35)

558. **X is older than Y by 5 years 10 years ago, how much older X will be than Y after 15 years.**
(a) 10 years (b) 15 years **(c) 5 years** (d) 20 years

559. **If in Question No.33 if present age of Y is 55 years, what was the age of X 10 years ago**
(a) 40 **(b) 50** (c) 45 (d) 35

560. **4 T shirts and 3 Trousers cost ₹1200 whereas 5 T shirts and 2 Trousers cost ₹1750. Find the cost of one T shirt and one Trouser.**
(a) (₹150, ₹500) (b) (₹250, ₹550) (c) (₹175, ₹625) (d) (₹125, ₹525)

561. **X has some 25 paise and 50 paise coins in his coins beg. If he has total 50coins valued ₹15, find the number of 25 paise and 50 paise coins he has in his bag.**
(a) (10,40) **(b) (40,10)** (c) (30,20) (d) (20,30)

562. **A has some ₹5 and ₹2 new currency notes in his pocket totaling 20 notes valued ₹70. Find the number of currency notes of each denomination.**
(a) (5,15) (b) (15,5) **(c) (10,10)** (d) none.

563. **A and B are two friends. A says to B "If you give me ₹20, I will have twice the amount you are left with. B replied. "If you give me ₹20 I will have the same amount you are left with. Find the amount each is having.**
(a) (₹140, ₹100) (b) (₹100, ₹140) (c) (₹80, ₹120) (d) (₹120, ₹80)

564. **In NCR area a Radio Taxi charges ₹150 for a distance of 12 Km and ₹180 for a distance of 15 Km. Find the charges for a distance of 20 Km.**
(a) ₹230 (b) ₹250 (c) ₹300 (d) ₹200

565. **In Question No. 39 what will be the changes for 25 Km.**
(a) ₹230 (b) ₹250 (c) ₹300 **(d) ₹280**

566. **In Question Nos. 39 and 40 what is the fixed charges.**
(a) ₹30 (b) ₹200 (c) ₹50 (d) ₹40

567. **In Question NO. 39 what is per Km. charges**
(a) ₹10 per Km+ ₹30 fixed charges. (b) ₹10 per Km (c) ₹12.50 per Km (d) ₹12 per Km

568. **Let marks obtained by Ram, Rahim and Jodu be A, B and C respectively. Given A : B – 1: 2, B:C = 3:4. The combined ratio A; B: C is**
(a) 1 : 2 : 4 **(b) 3 : 6 : 8** (c) 1 : 6 : 8 (d) none of them

569. **If** $\frac{\sqrt{a+\sqrt{b}}}{\sqrt{a-\sqrt{b}}} = \frac{2}{1}$ **then** $\frac{a+b}{a-b}$ **is equal to**
(a) 5/4 (b) 4/5 (c) 3 (d) none of them

570. **The time, in which the true discount on amount ₹550 due is ₹50 at 4% per annum, is**
(a) 2 years (b) 3 years **(c) 2.5 years** (d) none of them

571. **After rationalization $\frac{\sqrt{3+\sqrt{2i}}}{\sqrt{3-\sqrt{2i}}}$ will be**

(a) $1+2\sqrt{6i}$ (b) $\frac{5+2\sqrt{6i}}{5}$ (c) $1-2\sqrt{6i}$ (d) $\frac{1+2\sqrt{6i}}{5}$

572. $\frac{\left(2^{n+1}\right)+\left(2^{n+2}\right)}{\left(2^{n+2}\right)-2\left(\frac{1}{2}\right)^{1-n}}$ **simplifies to**

(a) 4 **(b) 2** (c) 8 (d) 20

573. **The value of log 2 log 2 log 3 81 is**

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

574. **The value of x satisfies the equation** $\sqrt{\frac{x}{1-x}}+\sqrt{\frac{1-x}{x}}=\frac{13}{6}$

(a) $\left(\frac{2}{3},\frac{3}{2}\right)$ (b) $\left(\frac{4}{9},\frac{9}{4}\right)$ (c) (4, 9) **(d) None of these**

575. **If** $^{m}c_{6} : {}^{m-3}c_{3}$ **= 91: 4 , then the value of m is**

(a) 13 **(b) 15** (c) 14 (d) none of these

576. **The area of the equilateral triangle with a side of length 2 cm is**

(a) $\frac{\sqrt{3}}{2}$ sq.cm **(b) $\sqrt{3}$ sq.cm** (c) $\frac{\sqrt{3}}{4}$ sq.cm (d) none of these

577. **A circular garden having diameter 60 ft. has a path of width 10 ft. surrounding outside the garden. Area of the path is**

(a) 2200sq. ft., (b) $\frac{28600}{7}$ sq. ft., (c) $\frac{1600}{7}$ sq. ft., (d) none of these

578. **A rectangular parallelepiped has length 20 cm, breadth 10 cm, and height 5 cm. the total surface area of it is**

(a) 350sq.cm (b) 1000 sq.cm, **(c) 700 sq.cm,** (d) none of these

579. **For a solid right circular cylinder of height 9 cm and radius of base 7 cm the total surface area is**

(a) 352sq.cm (b) 550sq.cm, (c) **704 sq .cm** (d) none of these

580. **The diameter of the base of a conical tent is 14 ft. and height of the tent is 15 ft. The volume of the space covered by the tent is**

(a) 2130cu. Ft., (b) 8520cu. Ft., (c) 700 cu. Ft., **(d) none of these**

581. **A The equation of a straight line passing through origin and perpendicular to the line 2x + 3y + 1 = 0 is**

(a) 3y + 2x = 0 (b) 2y + 3x = 0 **(c) 2y = 3x** (d) 3y = 2x

582. **Eccentricity of the hyperbola is $9x^2 - 16y^2 = 36$**

(a) $\frac{5}{4}$, (b) $\frac{4}{5}$, **(c)** $\frac{25}{16}$, (d) $\frac{16}{25}$,

583. **The equation of a parabola whose vertex and axis are (0, 0) and y =0 respectively, passing through (5, 4), is**

(a) $4y^2 = 5x$, (b) $5x^2 = 16y$ (c) $5y^2 = 4x$ **(d) $5y^2 = 16x$.**

584. **If $f(x) = \frac{x+1}{x-1}$, $f(f(x))$ for $x \neq 1$ is**

(a) 1 (b) 2 **(c) x** (d) $\frac{x+1}{x-1}$

585. **$\lim_{x \to 1} \frac{(x^2-1)2^x}{2x^2-3x+1}$ is evaluated as**

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

586. **If $y = (x^2+5)^2$ then $\frac{dy}{dx}$, at x = 2 is**

(a) 18 **(b) 72** (c) 81 (d) 36

587. **If $f(x, y) = x^3 + y^3$ then $x \frac{\partial f}{\partial x} + y \frac{\partial f}{\partial y}$ is**

(a) f (x, y) **(b) 3 f(x, y),** (c) 3 (d) none of these

588. **$\int_1^2 \frac{dx}{\sqrt{x-1}}$ is evaluated as**

(a) 2 (b) $2\sqrt{2}$ (c) - 2 (d) $-2\sqrt{2}$

589. **Arithmetic mean of 5 observations is 8. After calculation it was noted that observations 10 and 20 have been wrongly taken place of correct values 15 and 25 respectively. The correct mean is**

(a) 18 (b) 9 (c) 13 **(d) none of these**

590. **Two groups of 10 and 15 observations have means 10 and 20 respectively. Then grouped mean is**

(a) 15 **(b) 16** (c) 14 (d) none of these

591. **Geometric mean of first group of five observations is 8 and that of second group of 4 observations is $128\sqrt{2}$. Then grouped geometric mean is**

(a) 64 (b) $32\sqrt{2}$, **(c) 32** (d) None of these

592. **If two groups with 2 and 3 observations have harmonic means $\frac{2}{5}$, and $\frac{1}{5}$, respectively then combined harmonic mean of 5 observations is**

(a) $\frac{1}{2}$, **(b) $\frac{1}{4}$,** **(c)** $\frac{1}{3}$, (d) none of these

593. **If the two observations have harmonic mean and geometric mean 9 and 15 respectively, then arithmetic mean of the two observations**

(a)12 **(b) 25** (c) $\sqrt{135}$ (d) none of these

594. **If the two variables x and y are related by 2x + 3y = 12 and standard deviation of x is 6 then standard deviation of y is**

(a) 2 (b) 10 **(c) 4** (d) none of these

595. **For 10 values of variable x it is given that $\sum x = 13$, $\sum x^2 = 400$ and $u = \frac{x-5}{2}$. Then $\sum u^2$ is**

(a) 100 (b) 520 (c) 260 **(d) none of these**

596. **Mean deviation about mean is 5.8. Co-efficient of mean deviation about mean is 0.2. Then mean is**

(a) 1.16 (b) 2.9 **(c) 29** (d) none of these

597. **For a group of 10 observations, $\sum x = 452$, $\sum x^2 = 24270$ and mode 43.7 the coefficient of skewness is**
(a) 0.8 **(b) 0.08** (c) 8 (d) none of these

598. **The mean and coefficient of variation of runs made by a batsman in 10 innings are 40 and 125% respectively. The s. d. of the runs made by the batsman is**
(a) 50 (b) 40 (c) 20 (d) none of these

599. **What is the coefficient of regression of X on Y from the following information**
$\sigma_x = 4$, $\bar{Y} = 20$, $\bar{X} = 25$, $r = 0.6$. Standard deviation of Y = 5
(a) 0.48 (b) 0.75 (c) 0.90 (d) 0.58

600. **What is the coefficient of regression of X on Y from the following information**
$\sigma_x = 8$ $\bar{Y} = 36$ $\bar{X} = 30$, $r = 0.7$. Standard deviation of Y = 6
(a) 0.40 (b) 0.75 **(c) 0.93** (d) 0.65

601. **What is the coefficient of regression of X on Y from the following information**
$\sigma_x = 36$ $\bar{Y} = 30$ $\bar{X} = 36$, $r = 0.8$. Standard deviation of Y = 32
(a) 0.48 (b) 0.55 (c) 0.40 **(d) 0.90**

602. **What is the coefficient of regression of X on Y from the following information**
$\sigma_x = 5$ $\bar{Y} = 32$ $\bar{X} = 25$, $r = 0.64$. Standard deviation of Y = 32
(a) 0.50 (b)0.70 (c) 0.618 (d) 0.65

603. **What is the regression coefficient b_{xy} from the following details**
X = 0.64y + 19.10 ; Y = x + 5.25
(a) 0.85 **(b) 0.64** (c) 0.98 (d) 1

604. **In question No. 5 the coefficient of regression byx is equal to**
(a) 1.0 (b) 2.20 (c) 0.87 (d) .65

605. **What is the regression coefficient bxy from the following details**
13X = 7Y + 9.10; Y = 2X - 10
(a) 7/13 (b) 13/7 (c) 1.09 (d) 2.9

606. **What is the regression coefficient byx in question No. 605**
(a) 1.85 **(b) 2** (c) 0.09 (d) 1.05

607. **What is the regression coefficient bxy from the following details**
X = 7/3Y + 28.10; Y = 1.5x + 10
(a) 7/3 (b) 3/77 (c) 1.5 (d) 2.9

608. **What is regression coefficient byx in question No. 607**
(a) 2.01 (b) 1.09 **(c) 1.5** (d) 0.87

609. **If the regression coefficient bxy is 2.5, what is the value of a in the given equation 2X = aY + 12.6**
(a) 4 (b) 2.5 **(c) 5.0** (d) 3.32

610. **If the regression coefficient bxy is 2.0, what is the value of a in the given equation 2.9X = aY + 15**
(a) 5.8 (b) 2.9 (c) 6.18 (d) 4.32

611. **If the regression coefficient byx is 0.5, what is the value of a in the given equation 2Y = aX – 16.80**
(a) 4 (b) 0.5 **(c) 1.0** (d) 3.32

612. **If the regression coefficient byx is 3.0, what is the value of a in the given equation 2Y = aX + 18**
(a) 2.5 (b) 1.5 (c) 4.0 **(d) 6.00**

613. **Two regression lines obtained from the following data are as under Y = 2x+5, 3X = 2y – 18. If the variance of x = 25, the variance of y will be ……..**
(a) 16 (b) 81 (c) 36 **(d) 75**

614. **In question No. 15 the covariance of xy is ……..**
(a) 89 **(b) 50** (c) 99 (d) $66\sigma_x = 4$

615. **From the regression equations 8x – 10y + 66 = 0, 40x – 18y – 214 = 0, the value of Mean X, Mean Y, bxy, byx are ……..**
(a) (19,21,9/20,4/5) **(b)(13,17,9/20,4,/5)** (c) (11,15,8/20,4/5) (d) (16,19,19/20,4/5)

616. **From the regression equations 2x – 8y + 60 = 0, 40x – 18y – 220 = 0, the value of Mean X, Mean Y, bxy, byx are ……..**
(a) (10,10,9/20,1,/4) (b) (11,18,19/20,2/5) (c) 10,13,8/20,4/5) (d) (10,17,15/20,1/5)

617. **From the regression equations 6x – 10y – 10 = 0, 8x – 18y + 60 = 0, the value of Mean X, Mean Y, bxy, byx are ……..**
(a) (11,20,9/20,4/5) **(b) (15.71,8.42)** (c) $\frac{5}{3}$ (d) $\frac{4}{9}$

618. **What is co-efficient of correlation in question No. 616**
(a) 0.33 (b) 1.76 (c) 2.21 (d) 154

619. **What is co-efficient of correlation in question No. 617**
(a) 0.90 **(b) 0.86** (c) 0.98 (d) 2.22

620. **If regression coefficient between x and y is 1/3, y on x is – ¾, the coefficient of correlation between x and y is……..**
(a) -3 (b) 2 **(c) -1/2** (d) 1/3

621. **If regression coefficient between x and y is – 2/3, y on x is – 1/6, the coefficient of correlation between x and y is……..**
(a) - 3 (b) 1 (c) – 1/2 **(d) - 1/3**

622. **If regression coefficient between x and y is 1/6, y on x is 6, the coefficient of correlation between x and y is ……**
(a) - 1 **(b) 1** (c) 4 (d) 1/3

623. **If regression coefficient between x and y is -2/5, y on x is -5/2, the coefficient of correlation between x and y is ……..**
(a) - 3 (b) 2 (c) -1/5 **(d) -1**

624. **If coefficient of correlation between x and y is 0.5, standard deviation of x is 1.5, standard deviation of y = 3.0, Mean of X is 10, and Mean of Y = 8, the regression line of x on y is ……**
(a) x=0.25Y+8 (b) x=0.56Y + 9 (c) x=1.5Y - 106 (d) x = 0.3Y – 8

625. **In question No. 624 the regression line of y on x is**
(a) y=1.5x-6 **(b) y=x-2** (c) y=0.9x+8 (d) y=2.1x+12

626. **If coefficient of correlation between x and y is 0.6, standard deviation of x is 4, standard deviation of y=1.33, Mean of X is 15, and Mean of Y = 10, the regression line of x on y is……..**
(a) x=01.3Y+5.6 (b) x=0.125Y + 10 **(c) x=0.6Y+9** (d) x=0.3Y-8

627. **In question No. 626 the regression line of y on x is ……..**
(a) y=0.2x+7 (b) y=1.5x-10 (c) y=01.878x-15 (d) y=2.6x-14

628. **In CA CPT Examination Mean Marks obtained by the students taking classes from NDA are given below:**
Mean marks in Accounts and Law(X) = 70
Mean marks in Maths and Economics(Y)=85,

Co-efficient of correlation between Accounts(X) and Maths(Y) paper = 0.8
Standard deviation of marks in Accounts(X) = 12
Standard deviation of marks in Maths(Y)=15
From the above details the regression line of Accounts on Maths paper is……
(a) x=0.64y+15.6 (b) x=0.09+62.0 (c) x=0.099y+60 (d) x=0.034+68

629. **In question No. 628, the regression line of Maths on Accounts is ……**
(a) y=1.2x+12 **(b) y=x+15** (c) y=1.33x - 10 (d) 0.25x + 45

630. **In question No. 628 estimate of Marks in Maths if marks in Accounts paper is 75 is**
(a) 90 (b) 88 (c) 79 (d) 74

631. **In question NO. 628 the estimate of marks in Accounts paper if marks in Maths paper are 84**
(a) 80 (b) 72 **(c) 68.92** (d) 75

632. **If the regression equation of two variables are X= 0.5y + 10, y = 0.2x + 4.6, the mean value of X, Y, coefficient of correlation between X and Y are ……**
(a) (33.66, 7.33, 0.31) (b)(6,7,0.3) (c) 7,9,0.35) (d) 6,8,0.45)

633. **Find the most likely price of chicken in Delhi corresponding to the estimated price of ₹120 per kg. in Bombay on the eve of New Year, if mean price of chicken in Delhi and Bombay is ₹ 98 per kg. and Rs. 105 per Kg., with a standard deviation of ₹ 5 and ₹ 9 and coefficient of correlation of 0.75**
(a) (110.50) **(b) 114.17** (c) 101 (d) 119

634. **In question No. 633 the prevailing price in Mumbai will be – corresponding to the price of Rs. 110 per Kg. prevailing in Delhi**
(a) 122 (b) 130 **(c) 121.20** (d) 119.24

635. **In question No. 633 if the prevailing price in Delhi is Rs. 125 per kg. the corresponding price in Mumbai will be ……..**
(a) 169.82 (b) 134.65 (c) 139.25 (d) 151.61

636. **In question No. 633 if the prevailing price in Mumbai is Rs. 130 per kg. the price in Delhi will be ……**
(a) 122 (b) 103.25 (c) 128.01 **(d) 148.20**

637. **The batting record of Master Blaster Sachin Tendulkar in test series at 3rd position is as under:**
Average score in first inning = 54 runs
Average score in second inning = 48 runs
Standard deviation of score in first inning = 4 runs
Standard deviation of score in second inning= 6 runs, correlation of score in inning first and second=0.6
If Sachin Tendulkar score 80 runs in first inning, he is likely to score – runs in second inning
(a) 63 **(b) 113** (c) 71 (d) 76

638. **In question No. 637 if he score 79 runs in second inning how many runs he is likely o score in first inning of a test match**
(a) 85 (b) 91 (c) 81 **(d) 66.4**

639. **Average rainfall = 26.7 cm, standard deviation of rainfall 4.6cm, Mean of Sugar crop = 508.4qt, Standard deviation of Sugar production = 36.8 qt. correlation = 0.6, the estimate of production of sugar in 2007 corresponding to the estimate of 32cm rainfall is ……..**
$\sigma_x = 4$ $\bar{Y} = 20$ $\bar{X} = 25$, $r = 0.6$. **Standard deviation of Y = 5**
(a) 520qt **(b) 533.84 qt** (c) 541.90qt (d) 521qt

640. **In question No. 639, the estimate of rainfall corresponding to estimated production of 600 Qt is…….**
(a) 33.57 cm (b) 31.6cm (c) 29.5cm (d) 35cm

641. **In question No. 639, the estimate of production corresponding to estimated rainfall of 20 cm is……**

(a) 469.5 (b) 498.90 (c) 509.26 **(d) 419.06**

642. **In question No. 639, the estimate of rainfall corresponding to estimated production of 480 Qt is……**
(a) 33.57cm (b)36.6cm (c) 20.5cm **(d) 24.57cm**

643. **If r=0.8, N = 100, the probable error of coefficient of correlation is ……**
(a) 0.021 **(b) 0.024** (c) 0.29 (d) 0.031

644. **In question No. 643, the limit of coefficient of correlation of population is…….**
(a) 0.776 to 0.824 (b) 0.74 to 0.810 (c) 0.72 to 0.79 (d) 0.70 to 0.76

645. **If r=0.8, N=81, the probable error of coefficient of correlation is……**
(a) 0.0321 (b) 0.044 **(c) 0.027** (d) 0.041

646. **In question No. 645, the limit of coefficient of correlation of population is…….**
(a) 0.776 to 0.824 **(b) 0.551 to 0.648** (c) 0.70 to 0.77 (d) 0.74 to 0.79

647. **Find the mean value of variable x, y and coefficient of correlation between them from the following regression lines 5x+7y-10 = 0,6x+2y-8=0, standard deviation of y = 16, standard deviation of x=2.72**
(a) (3/8, 9/8, 3.52) (b) 5/7,9/11,2.72) (c) 1/8,3/8,1.72) **(d) 5/8,9/8,2.04)**

648. **Average rainfall in Andhra = 40.0cm, standard deviation of rainfall = 3.0cm, Mean of Paddy yield = 800qt, standard deviation of paddy production = 10qt, correlation = 0.6, the estimate of production of paddy in 2007 corresponding to the estimate of 72cm rainfall is……..**
(a) 772qt (b) 753.84Qt (c) 641.90Qt **(d) 978**

649. **If 3X-5=4X-10, then X is equal to ……..**
(a) 5 (b) -5 (c) 6 (d) 4

650. **If -3X+18=4X-3, then X is equal to ……**
(a) 2 (b) -5 **(c) 3** (d) 1

651. **Find the value of K if 5X+37=K-3X, when X is equal to ……**
(a) 16 (b) 15 **(c) 21** (d) 10

652. **If X+Y=3, 3X+4Y=11, then (x,y) are equal to …….**
(a) (1,2) (b) (-5,1) (c) (6,2) (d) (4,1)

653. **If 3X+Y=7, 2X+3Y=7 then X, Y are equal to ……**
(a) (5,1) **(b) (2,1)** (c) (6,1) (d) (1,4)

654. **For which value of X,Y, 3X-2Y-6 = 2X+3Y-17 =0**
(a) (4,3) (b) (2,3) (c) (3,1) (d) (1,2)

655. **If 5X+Y =15, 2X-2Y=-6 then X,Y are equal to ……**
(a) (5,2) **(b) (2,5)** (c) (6,3) (d) (1,1)

656. **For which value of X,Y** $\frac{x}{4}+\frac{y}{5}$ **-6=** $\frac{x}{2}+\frac{y}{3}$ **-11 = 0 are equal to ……**
(a) (1,2) (b) (2,3) (c) (6,1) **(d) (12,15)**

657. **If X/3+Y/2=7, 2X+Y=26 then X,Y are equal to ……..**
(a) (1,5) (b) (1,3) **(c) (9,8)** (d) (6,3)

658. **The point, ---------- is on the line Y=X-3……**
(a) (2,-1) (b) (4,3) (c) (0,1) (d) (3,-1)

659. **The point, ---------- is on the line Y=2X-3 ……**

(a) (2,-1) (b) (4,3) **(c) (4,5)** (d) (3,-1)

660. **For the line 2X-Y=5 if X=4 then Y= ……**
(a) 2 **(b) 3** (c) -1 (d) 0

661. **For the line 3X-2y=5 if X=2 then Y=**
(a) 1/2 (b) 3/4 (c) 3/5 (d) 1

662. **The solution to 3X+2Y=-25, -2X-Y=10 is……**
(a) 5,-20 (b) 2,9 (c) 5,8 (d) 4,9

663. **The solution to 3X-2Y=11, -2X-Y=8 is ……**
(a) (5,-2) (b) 2,1 (c) 5,-2 (d) 4,9

664. **The solution to 5X+2Y=-16, -2X-2Y=-10 is……**
(a) 5,-20 **(b) 2,3** (c) 5,8 (d) 4,9

665. **2X+3Y-5=0 and KX-6Y-8=0 have unique solutions if K =**
(a) 4 (b) 3 (c) -2 (d) -4

666. **If the numerator of a fraction is multiplied by 3 and denominator is reduced by 3 we get 18/11. But if the numerator is increased by 8 and denominator is doubled we get 2/5, then the fraction is……**
(a) 13/25 (b) 20/21 **(c) 12/25** (d) 11/19

667. **If 1 is added to the denominator to a certain fraction it becomes 1/3 and if 1 is subtracted from denominator it becomes ½, then the fraction is ……**
(a) 2/5 (b) 3/7 (c) 2/6 (d) 3/10

668. **A two digit No. is six times the sum of its digits. The number obtained by interchanging the digit is less by 9. The original number is…….**
(a) 68 (b) 72 **(c) 54** (d) 63

669. **If sum of digits of two digit No. is 9 and the digits obtained by interchanging the digits exceeds the given number by 27, then the number is**
(a) 36 (b) 45 (c) 23 (d) 65

670. **In the equation 2x-y=5 if x=4 then y=**
(a) 3 (b) 4 (c) -2 (d) -5

671. **Point =---------- are on 3X+2Y=1**
(a) (1,1) (b) (-1,-1) (c) (1,-1) **(d) (0,1)**

672. **If x+4=4, 2x-5y=1 then x & y are……**
(a) (1,0) **(b) (0,-1/5)** (c) 1,1/5 (d) 1/5,0

673. **If 2x+3y=1, x+3y=-1, then x and y are……**
(a) (2,-1) (b) (1,-2) (c) (-1,2) (d) (0,2) (e) 1/5,0

674. **If 2x+3y=7, x+3y=5, then x and y are……**
(a) (2,-1) (b) (1,-2) (c) (-1,2) **(d) (2,1)**

675. **If 2x-3y=1, x-3y=-1, then x and y are……**
(a) (2,1) (b) (1,-2) (c) (-1,2) (d) (0,2)

676. **If x+3y=1, x+2y=2, then x and y are……**

(a) (2,-1) **(b) (4,-1)** (c) (-1,2) (d) (0,2)

677. **If 3x-y=0, x+3y=10, then x and y are.....**
(a) (2,-1) **(b) (1,3)** (c) (-1,2) (d) (0,2)

678. **If x-y=0, x+3y=4, then x and y are.....**
(a) (2,-1) **(b) (1,1)** (c) (-1,2) (d) (0,2)

679. **What is the slope of the line passing through (4,2) and (3,5)**
(a) -3 (b) 3 (c) 2 (d) -2

680. **What is the slope of the line passing through (5,3) and (3,6)**
(a) -3/2 (b) 3/2 (c) 2 (d) -2

681. **What is the slope of the line passing through (5,2) and (3,7)**
(a) -3 **(b) -5/2** (c) 5/2 (d) -2

682. **What is the slope of the line passing through (4,3) and (3,-5)**
(a) 3 **(b)8** (c) 2 (d) -3

683. **What is the slope of the line passing through (-4,2) and (3,-5)**
(a) -1 (b) -3 (c) 2 (d) -2

684. **What is the slope of the line passing through (4,-2) and (3,7)**
(a) -3 **(b) -9** (c) 2 (d)-2

685. **What is the slope of the line passing through (-4,-2) and (-5,-7)**
(a) -3 **(b) 5** (c) 2 (d) -2

686. **What is the slope of the line passing through (2,-5) and (5,5)**
(a) 12 **(b) 10/3** (c) 5 (d) 3

687. **What is the slope of the line passing through (3,-5) and (-4,7)**
(a) -12/7 (b) 7 (c) 5 (d) 4

688. **What is the slope and Y intersect of line 3X+5Y=9**
(a) (-3/5,9/5) (b) (9,-3/5) (c) (3/5,-9) (d) (-3/5,-9)

689. **What is the slope and Y intersect of line 6x+5y=12**
(a) (-6/5,12) (b) (12,-6/5) (c) (12/5,-12) (d) (-6/5,-12)

690. **What is the slope and Y intersect of line 3x-5y=9**
(a) (-3/5,9) (b) (9,-3/5) **(c) (3/5,-9/5)** (d) (-3/5,-9)

691. **What is the slope and Y intersect of line 7x+5y=10**
(a)(-3/5,9) (b) (9,-3/10) (c) (7/5,-10) **(d) (-7/5,2)**

692. **What is the slope and Y intersect of line 3x+7y=11**
(a) (-3/7,11) (b) (9,-3/5) **(c) (3/7,11/7)** (d) (-7/5, -11)

693. **What is the slope and Y intersect of line 4x+5y=7**
(a) (-6/5,9) (b)(7,-4/5) **(c) (4/5,7/5)** (d) (-3/5,-9)

694. **What is the slope and Y intersect of line 3x+4y=9**
(a) (-3/4,-9/4) (b) (9/4,-3/5) (c) (3/5,-9/4) (d) (-5/7,-9)

695. **What is the slope and Y intersect of line 3x+6y=11**

(a) (1/2,-11/6) (b) (9/4,-11/6) (c) (1/5,-11/7) (d) (-4/7,-9)

696. **What is the slope and Y intersect of line 5x+7y=11**
(a) (-3/4,-9/4) **(b) (-5/7,-11/7)** (c) (3/5,-9/4) (d) (-5/11,-11)

697. **What is the slope and Y intersect of line 7x+4y=11**
(a) (-5/4,-11/4) (b) (7/4,-11/5) (c) (11/5,-9/4) **(d) (-7/4,-11/4)**

698. **Find the value of X if IX+11 =3X-5**
(a) 1 or 2 **(b) 3 or 1** (c) 1 or 2 (d) 2 or 3

699. **A can't buy more than 100 qtl of raw material X and Y. X and Y can be related by which of the following inequalities…….**
(a) (x+y=100) **(b) (x+y≤100)** (c) (x+y≥100) (d) (x+y<100)

700. **A requires at least 200 pieces of shirt and trouser for his newly opened showroom. If X stands for shirts and Y stands for trousers, this can be expressed as……**
(a) (x+y≥200) (b) (x+y≤200) (c) (x+y=200) (d) (x+y≠100)

701. **A manufacturer produces two items X and Y. X requires 20kg of raw material and Y requires 25 kg. If raw material availability with him is 2 tons. This can be expressed in the form of which of the following linear equation.**
(a) (20x+25y≤2000) (b) (20x+25y=2000) (c) (25x+20y>2000) (d) (20x+25y≥2000)

702. **A,B & C produces two items X and Y. He has only ₹25,000 to invest and storage capacity of 300 items only. X cost him ₹400 per piece and Y cost him ₹250 per piece. This can be expressed in the form of which of the following set equation**

(a) x+y≤300	**(b) x+y≤300**	(c) x+y =300	(d) x+y≤300
400x+250y≥25000	**400x+250y≤25000**	400x+250y≥25000	400x+250y≤10000
x≥0,y≤0	**x≥0, y≥0**	x=0,y≤0	x,y ≥0

703. **A wholesale dealer deals in only two items X & Y. Due to sluggish demand he cannot sell more than 50 and 100 pieces of X & Y respectively per day. If he has only ₹10,000 to invest and if the cost of each item is ₹50 and 40 respectively, this can be expressed in the following equation**

(a) x≤50	(b) x≤50	(c) x+y≤50	**(d) x≤50,y≤100**
y≤100	y≥100	50x+40y≤10000	**150x+40y≤10000**
50x+40y≥10000	50x+40y≤10000		

704. **A company produces two items X and Y. Both the items are produced in two machines I and II. The total time available in each machine and the time required for each product in each machine are given below:**

MACHINE	**X**	**Y**	**TIME Available (Hours)**
I	**3**	**1**	**20**
II	**3**	**4**	**40**

This situation can be expressed in the following set of linear equation:

(a) 2x+y≤20	(b) x+y≤20	(c) 2x+4≤20	(d) 2x+3y≥20
3x+4y≤40	x+4y≤240	3x+4y≥40	x+y≤40
x≥0, y≥0	x≥0,y≥0	x≥0,y≥0	x≥0,y≥0

705. **A company produces two items X and Y. Bothe the items are produced in two names I and II. The total time available in each machine and the time required for each product in each machine are given below:**

MACHINE	**X**	**Y**	**TIME AVAILABLE**
I	**1**	**2**	**24**
II	**2**	**3**	**36**

This situation can be expressed in the following set of linear equation:
(a) x+2y≤24 **(b) x+2y≤24** (c) x+24=24 (d) x+2yy≤24

3x+4y≤36	**x+3y≤36**	2x+3y=36	2x+3y≥36
x≥0,y≥0	**x≥0,y≥0**	x,y≥0	x≥0,y≥0

706. **ABC Ltd. deals in the products X and Y. Both the products are in great demand. The firm can sell at least 100 units of X and 150 units of Y per day. If X & Y give a profit of ₹20 and ₹25 per unit and the objective of the firm is to maximize the total profit. This situation can be expressed in the form of which of the following set equation:**

(a) x≥0	**(b) maximize**	(c) minimize	(d) minimize
y≥0	**20x+25y**	20x+25y	20x+25y
maximize	**x≥100**	x≤100	x≥100
20X+25y	**y≥150**	y≤150	y≥150

707. **ABC Ltd. combines two products X and Y to form a gift during the Dewali season in order to increase its sale. Each pack must weigh at least 10kg and should contain at least 2 kg of X and not more than 6 kg of Y. This can be expressed**

(a) x+y=10	**(b) x+y≥10**	(c) x+y≤10	(d) x+y ≤10
x≥2	**x≥2**	x≥0	x=2
y≤6	**y≤6**	y≥6	y=6
x,y ≥0	**x,y≥0**	x,y≥0	x,y≥0

708. **The standard weight of a gift pack is 5 kg. It contains two items X and Y. The gift pack should contain at least 2 kg of X and not more than 3 kg of Y. This situation can be expressed as**

(a) x+y=5	(b) x+y≤5	(c) x+y≥5	(d) x+y=0
x≥2	x≥2	x≥2	x≥2
y≤3	y≤3	y≤3	y≥6
x,y≥0	x,y≥0	x,y≥0	x,y≥0

709. **Two types of ties are available in a departmental store. Tie X is available for ₹120 per piece and Y for ₹175 per piece. If Z is retail dealer in tie has only ₹30,000 to spend on purchase of tie and his storage capacity is limited to 500 piece of ties. This situation can be expressed in the following equation**

(a) x+y≤500	(b) x+y ≥500	**(c) x+y=200**	(d) x+y≥500
120x+175y≤30000	120x+175y≤30000	**120x+175y =30000**	120x+175y≤30000
x,y≥0	x,y≥0	**x,y≥0**	x,y≥0

710. **A is a dealer in two types of shaving creams X & Y. He has ₹20,000 to spent and has space to store 250 packets of shaving creams at most at a time. Shaving cream X cost ₹240 per box and Y cost ₹420 per box. This situation can be expressed in the following equation**

(a) x+y≤200	(b) x+y ≤200	(c) x+y≥200	**(d) x+y=200**
240x+420y≤20000	240x+420y ≤20000	240x+420y≤20000	**240x+420y=20000**
x≥0,y≥0	x,y≥0	x,y≥0	**x,y≥0**

711. **At what point the given function is discontinuous f(x) = $(x^2 + 6x + 9) / (x^2 - 9)$**

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

712. **At what point the given function is discontinuous If f(x) =** $\frac{x-4}{x^2-16}\,\frac{x^5-2x^2+5x}{x^3-x^2+x-1}$

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

713. **At what point the given function is discontinuous if f(x) =** $\frac{x^2-25+10x}{x^2-25}$

(a) (3) **(b) (5)** (c) (1) (d) (- 1)

714. **At what point the given function is discontinuous If f(x) =** $\frac{x^2}{x-5}$

(a) (3) (b) (5) (c) (1) (d) (-1)

715. **At what point the given function is discontinuous if f(x) = $\frac{x^2+1}{x+3}$**

(a) (3) (b) (5) (c) (1) **(d) (-3)**

716. **At what point the given function is discontinuous If f(x) = $\frac{3x^2+5x+1}{x^3+x^2+x+1}$ =**

(a) (3) (b) (5) (c) (1) (d) (-1)

717. **At what point the given functions discontinuous If f(x) $\frac{x^2+3x-5}{x^2+3x+2}$**

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

718. **The function f(x) = $\begin{matrix} ax+4 \text{ if } n \le 3 \\ x-1 \text{ if } n \ge 3 \end{matrix}$** is continuous at x = 3, if a is

(a) (2 /3) (b) (1 /3) (c) (-1 /3) **(d) (-2 /3)**

719. **The function f (x) = $\begin{matrix} 9x+6 \text{ if } x \le 3 \\ x+2 \text{ if } x \ge 3 \end{matrix}$ is continuous at x = 3, if a is .....**

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

720. **The value of constant K is.....so that the function f (x) = $\begin{matrix} x^2-x+12 \text{ if } x \ne 3 \\ x-3 \quad\quad K \; x=3 \end{matrix}$ is continuous at x = 3**

(a) (7) **(b) (3)** (c) (5) (d) (-7)

721. **The value of constant K is..... So that the function f(x) = $\begin{matrix} x^2-x+12 \text{ if } x \ne 4 \\ x-4 \quad\quad K \; x=4 \end{matrix}$ is continuous at x = 4**

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

722. **For what value of K is the function f(x) = $\frac{x-4}{x^2-16}$ $x \ne 5$ is continuous at x = 5**

(a) (13) (b) (10) (c) (11) **(d) (-10)**

723. **If f(x) = [1 / (1 – x)], the function is discontinuous at x =**

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

724. **If f(x) = $\begin{matrix} x^2 \text{ if } x \ne 1 \\ 2 \text{ if } x=1 \end{matrix}$ the function is discontinuous at x = 1**

(a) (-1) (b) (1) **(c) (2)** (d) (-2)

725. **If f(x) = $\frac{x^2-7}{x^3-x^2+x-1}$ the function is discontinuous if x =**

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

726. **If f(x) = (x +2) / (x – 3), the function is discontinuous if x =**

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

727. **The fair charges of Metro Rail is a function of distance, travelled which is given below:**

$\begin{cases} 7 \text{ if } \le 7 \end{cases}$

The 9 if 7 < x ≤ 12 the function is discontinuous for value of x =
12 if x > 12

(a) (7) (b) (5) **(c) (7, 12)** (d) (- 1)

728. **If f(x) = $\begin{matrix} 2x+3 \text{ if } x > 3 \\ 3x+4 \text{ if } x \le 2 \end{matrix}$ is discontinuous at x**

(a) (-1) (b) (-2) **(c) (1)** (d) (2)

729. **If f(x) = $\begin{matrix} x^3 \text{ if } x < 1 \\ x \text{ if } x \ge 1, \text{ bat } < 2 \\ 2x^2 \text{ if } x \ge 2 < 3 \end{matrix}$ is discontinuous at x =**

(a) (2) **(b) (5)** (c) (1, 12) (d) (1)

730. **At what value of X the function is continuous in question No. 729**

(a) (1) (b) (5) **(c) (2)** (d) (-1)

731. **A wholesale readymade garment dealer has the following price pattern ₹15 per piece for 20 or less than 20, ₹20 per piece for quantity above 20 but up to 30 pieces, ₹10 per piece for quantity more than 30. The price and quantity function is not continuous at quantity x = 20 because……**

(a) (RHL x- 20 ≠ LHL x → 20) (b) (Is not defined at x = 20) (c) (RHL x- 10 ≠ LHL → x 10) (d) (none)

732. **In question 731, the function f(x) is not a continuous function at x = 30 because……..**

(a) (RHL x- 20 ≠ LHL x → 10) (b) (Is not defined at x = 20)
(c) (RHL x at 30 ≠ LHL x → 30) (d) (None)

733. **From the following data the karlpearson coefficient of correlation is**

x	**6**	**8**	**10**	**7**	**10**	**7**
y	**12**	**10**	**8**	**12**	**8**	**10**

(a) 0.97 (b) 0.85 **(c) -0.93** (d) 0.65

734. **From the following data the karlpearson coefficient of correlation is**

x	**9**	**11**	**13**	**10**	**13**	**10**
y	**16**	**14**	**12**	**16**	**12**	**14**

(a) -0.93 (b) 0.85 (c) 0.70 (d)0.65

735. **From the following data the karlpearson coefficient of correlation is**

X	**7**	**9**	**11**	**8**	**11**	**8**
y	**14**	**12**	**10**	**14**	**10**	**12**

(a) 0.97 (b) 0.85 (c) 0.78 **(d) -0.93**

736. **From the following data the karlpearson coefficient of correlation is**

X	**11**	**15**	**15**	**12**	**15**	**10**

y	18	13	11	15	11	16

(a) -0.99 **(b) -0.89** (c) 0.80 (d) -0.50

737. **Number of observations N=10; Mean X=22, Mean Y=15, Sum of squared deviations of X from mean value =148, Sum of squared deviation of Y from mean value=168. Sum of multiplication of deviation of X and Y= 124.**
From the above details the coefficient of correlation will be
(a) 0.79 (b) 0.87 (c) 0.65 (d) 0.43

738. **Sum of deviations of X from mean value =8, Sum of squared deviation of Y from mean value =54. Sum of multiplication of deviation of X and Y =32, Sum of squared deviations of X from mean value =60**
From the above details the coefficient of correlation will be
(a) 0.58 **(b) 0.56** (c) 0.61 (d) 0.47

739. **Number of observations N=10**
Mean X= 22, Mean Y=15, Sum of squared deviations of X from mean value = 120, Sum of squared deviation of Y from mean value=144. Sum of multiplication of deviation of X and Y =124
From the above details the coefficient of correlation will be
(a) 0.78 (b) 0.87 (c) 0.65 (d) 0.43

740. **No of observations N=10**
Mean X=22, Mean Y=15, Sum of squared deviations of X from mean value=148, Sum of squared deviation of Y from mean value =168. Sum of multiplication of deviation of X and Y=36
From the above details the coefficient of correlation will be……
(a) 0.27 (b) 0.61 (c) 0.45 (d) -0.10

741. **If the coefficient of correlation between x and y is 0.52 and covariance is 25 and the variance of X is 16, the standard deviation of Y will be……**
(a) 4.9 **(b) 12** (c) 11.87 (d) 2.99

742. **If the coefficient of correlation between X and Y is 0.88 and covariance is 54 and the variance of X is 25, the standard deviation of Y will be…….**
(a) 3.9 **(b) 2.45** (c) 0.65 (d) 1.09

743. **If the coefficient of correlation between X and Y is 0.42 and covariance is 30 and the variance of Y is 16, the standard deviation of X will be ……**
(a) 4.46 (b) 1.52 (c) 2.80 (d) 1.86

744. **Find the coefficient of correlation between X and Y if the covariance is 25 and the variance of X and Y are 9 and 12.66 respectively**
(a) 1.89 (b) 0.58 **(c) 2.32** (d) 1.54

745. **If the coefficient of correlation between X and Y is 0.48 and covariance is 39, the variance of Y is 25, the standard deviation of X will be ……**
(a) 14.46 **(b) 16.25** (c) 12.80 (d) 9.86

746. **What is the covariance if the coefficient of correlation between x and y is 0.65 and the variance of x and y are 25 and 9 respectively**
(a) 10.25 (b) 8.65 **(c) 9.75** (d) 11.06

747. **What is the covariance if the coefficient of correlation between x and y is 0.87 and the variance of x and y are 36 and 25 respectively**
(a) 18.25 **(b) 26.10** (c) 19.25 (d) 21.06

748. **What is the covariance if the coefficient of correlation between x and y is 0.92 and the standard deviation from mean value of x and y are 5.26 and 8.87 respectively.**

(a) 40.25 (b) 38.65 (c) 39.75 **(d) 42.92**

749. If the coefficient of correlation between two variables is 0.7, number of observations being 25. Find the limit within the correlation lies with another sample
(a) 0.631 to 0.7679 (b) 0.689 to 0.823 (c) 0.765 to 0.843 (d) 0.65 to 0.756

750. If the coefficient of correlation between two variables is 0.8 and their covariance is 24. If the variance of X series on Y is 25, the standard deviation of Y series will be……..
(a) 6.24 (b) 5.94 **(c) 6.00** (d) 5.54

751. If the coefficient of correlation between two variables is 0.6, number of observations being 25. Find the limit within which the correlation lies with another sample
(a) 0.614 to 0.786 (b) 0.629 to 0.793 (c) 0.665 to 0.764 (d) 0.65 to 0.76

752. The following are the ranks of 10 students in Economics and Accountancy

Sr. No.	1	2	3	4	5	6	7	8	9	10
Rank Accountancy	10	4	1	8	3	9	6	5	2	7
Rank Economics	8	3	2	6	1	7	10	9	4	5

The coefficient of rank correlation between the marks in Accountancy and Economics is
(a) 0.648 (b) 0.872 (c) 0.69 (d) 0.78

753. The following are the ranks of 10 students in English and Maths

Sr.No	1	2	3	4	5	6	7	8	9	10
Rank Math	9	6	4	5	10	3	1	7	2	8
Rank English	8	9	3	6	7	1	2	5	4	10

The coefficient of rank correlation between the marks in Maths and English is
(a) 0.61 **(b) 0.769** (c) 0.59 (d) 0.79

754. The following are the marks of 10 students in Physics and Maths obtained in CBSE Examination during 2012-13

Sr. No	1	2	3	4	5	6	7	8	9	10
Physics	80	87	59	89	97	95	79	90	94	76
Maths	74	78	76	70	89	90	65	81	83	75

The coefficient of rank correlation between the marks in Maths and Physics is
(a) 0.63 (b) 0.769 **(c) 0.73** (d) 0.71

755. The following are the marks of 10 students in Paper 1 and Paper 2 of CA CPT examination taking classes from NDA, New Delhi

Sr. No	1	2	3	4	5	6	7	8	9	10
Paper 1	80	59	88	89	97	95	79	90	76	94
Paper 2	74	78	70	76	89	65	90	81	83	75

The coefficient of rank correlation between Paper 1 and Paper 2 is
(a) 0.33 (b) 0.79 (c) 0.43 **(d) -0.22**

756.

Interview	44	46	34	41	36	39	45	43	31	32

Written examination	**49**	**44**	**39**	**40**	**42**	**46**	**41**	**38**	**43**	**47**

The above table shows the marks obtained by 10 students in their personal interview and written examination for MBA Examination. The rank correlation between the ranks obtained by them is…….

(a) -0.127 (b) 0.19 (c) 0.33 (d) 0.42

757. **Given the coefficient of correlation being 0.8, the coefficient of determination will be……**
(a) 0.98 **(b) 0.64** (c) 0.66 (d) 0.54

758. **Given the coefficient of correlation being 0.9, the coefficient of determination will be……**
(a) 0.99 (b) 0.64 **(c) 0.81** (d) 0.54

759. **If the coefficient of determination being 0.49, what is the coefficient of correlation**
(a) 0.7 (b) 0.80 (c) 0.90 (d) 0.60

760. **Given the coefficient of determination being 0.36, the coefficient of correlation will be…….**
(a) 0.30 (b) 0.40 **(c) 0.60** (d) 0.50

761. **If the coefficient of correlation between x and y is 2/3 and the standard deviation of x is 3 and standard deviation of y is 4, the covariance between x and y will be……**
(a) 3 (b) 6 (c) 7 **(d) 8**

762. **If the coefficient of correlation between x and y is ¾ and the standard deviation of x is 4 and standard deviation of y is 3, the covariance between x and y will be …….**
(a) 9 (b) 6 (c) 7 (d) 8

763. **If** $y = \frac{2-3x}{(2-3x)}$, **then** $\frac{dy}{dx}$ **is equal to……**

(a) $\left(\frac{-12}{(2+3x)^2}\right)$ (b) $\left(\frac{12}{(2+3x)^2}\right)$ (c) $\left(\frac{-12}{(2+3x)}\right)$ (d) $\left(\frac{1}{(2+3x)^2}\right)$

764. **If y = (3+2x)/(3-2x), then** $\frac{dy}{dx}$ **is equal to……**

(a) $\left(\frac{-12}{(2+3x)^2}\right)$ **(b)** $\left(\frac{12}{(3+2x)^2}\right)$ (c) $\left(\frac{-12}{(2+3x)}\right)$ (d) $\left(\frac{1}{(3+2x)}\right)$

765. $\frac{dy}{dx}$ **of** $e^{1/x}$ **is equal to……**

(a) $(-e^{1/x}/x^2)$ (b) (e^{-4}) (c) (1) (d) $(1/x^2)$

766. $\frac{dy}{dx}$ **of** e^{e^x} **is equal to……**

(a) $(-e^{1/x}/x^2)$ (b) (e^{-x}) (c) (1) **(d)** $(e^x \cdot e^{e^x})$

767. **If** $y = 1/x^5$, **then** $\frac{dy}{dx}$ **is equal to……**

(a) $(-6/x^6)$ (b) $(6/x^5)$ (c) $(6x^5)$ (d) $(x^6/5)$

768. If $y = \frac{x^2 - 1}{(x^2 + 1)}$, then $\frac{dy}{dx}$ is equal to.....

(a) $\left(\frac{4x}{(1+x^2)^2}\right)$ (b) $\left(\frac{2x}{(x^2+3x)}\right)$ (c) $\left(\frac{3x}{(x^2+3x)}\right)$ (d) $\left(\frac{-x}{(x^2+x)}\right)$

769. $\frac{x^2 + 1}{(x^2 - 1)} \frac{dy}{dx}$ is equal to.....

(a) $\left(\frac{-4x}{(1-x^2)^2}\right)$ (b) $\left(\frac{4x}{(1-x^2)^2}\right)$ (c) $\left(\frac{-4}{(1+x^2)^2}\right)$ (d) $\left(\frac{4}{(x^2+1)}\right)$

770. If $y = \frac{1+\sqrt{x}}{(\sqrt{x}-1)}$, then $\frac{dy}{dx}$ is equal to.....

(a) $\frac{\sqrt{x}}{(\sqrt{x}-1)}$ (b) $\frac{1}{\sqrt{x}(\sqrt{x}-1)^2}$ **(c)** $\frac{-1}{\sqrt{x}(\sqrt{x}-1)^2}$ (d) $\frac{1}{(x\sqrt{x}-1)}$

771. If $Y = \frac{1+\sqrt{x}}{(1-\sqrt{x})}$, then $\frac{dy}{dx}$ is equal to.....

(a) $\frac{x}{\sqrt{x}(\sqrt{x}-1)}$ **(b)** $\frac{1}{\sqrt{x}(\sqrt{x}-1)^2}$ (c) $\frac{-1}{\sqrt{x}(\sqrt{x}-1)^2}$ (d) $\frac{1}{(\sqrt{x}-1)^2}$

772. If $y = (1+2x^2)/(1-2x^2)$, then $\frac{dy}{dx}$ is equal to.....

(a) $\left(\frac{8x}{(1-2x^2)^2}\right)$ (b) $\left(\frac{12}{(x^2+3x)}\right)$ (c) $\left(\frac{-12}{(x^2+3x)}\right)$ (d) $\left(\frac{-1x}{(1-2x^2)^2}\right)$

773. If $Y = (1-x^2)/(1+x^3)$, then $\frac{dy}{dx}$ =

(a) $\left(\frac{x^3+x-2}{(1-x^3)^2}\right)$ **(b)** $\left(\frac{x[3x^3-3x+2]}{(1+x^3)^2}\right)$ (c) $\left(\frac{x[3x^3-x+2]}{(1+x^3)^2}\right)$ (d) $\left(\frac{[x^3-x+2]}{(1+x^3)^2}\right)$

774. If $Y = \log(2x+5)$, then $\frac{dy}{dx}$ is equal to.....

(a) (2)/(x+5) (b) $(2^x)/(2x+5)$ **(c) (2)/(2x +5)** (d) (1)/(2x+5)

775. **If $y = \log(2x^2+5)$, then $\frac{dy}{dx}$ is equal to.....**

(a) $(4x)/2x^2+5$ (b) $(-4x)/(2x^2+5)$ (c) $(2)/(2x+5)$ (d) $(-4)/(2x^2+5)$

776. **If $y = \log(3x^2-1)$, then $\frac{dy}{dx}$ is equal to.....**

(a) $(2)/(3x^2-1)$ **(b) $(6^x)/(3x^2-1)$** (c) $(2)/(3x^2+5-1)$ (d) $(-2x)/(3x^2-1)$

777. **If $y = \log(3x^2+5x+1)$, then $\frac{dy}{dx}$ is equal to.....**

(a) $(6x+5)/(3x^2+5x+1)$ (b) $(-6x+5)/(3x^2+5x+1)$ (c) $(-6)/(3x^2+5x+1)$ (d) $(6)/(3x^2+5x+1)$

778. **If $xy = c^2$, then $\frac{dy}{dx}$ is equal to.....**

(a) $(1/x)$ **(b) $(-y/x)$** (c) (y/x) (d) (x)

779. **If $x^2y = 5$, then $\frac{dy}{dx}$ is equal to.....**

(a) $(2y/x)$ (b) $(-y/x)$ **(c) $(-2y/x)$** (d) (x/y)

780. **If $x^2y = 5$, then $\frac{dy}{dx}$ is equal to.....**

(a) $(-y/2x)$ (b) $(-y/x)$ (c) $(-2y/x)$ (d) $(-x/y)$

781. **If $x^3y^2 = 6$, then $\frac{dy}{dx}$ is equal to.....**

(a) $(-y/2x)$ **(b) $(-3y/2x)$** (c) $(-2y/x)$ (d) $(2x/y)$

782. **If $x = 2t+3$ and $y = 2t^2-5$, then $\frac{dy}{dx}$ is equal to.....**

(a) $(2t)$ (b) $(-3t)$ (c) $(2t/3y/x)$ (d) (t)

783. **If $x = 3t^2+5$ and $y = (t^3/3)+5$, then $\frac{dy}{dx}$ is equal to.....**

(a) (t^2) (b) $(-3t)$ **(c) $(t/6)$** (d) $(t/3)$

784. **If $x = t^2/5+2$ and $y = t^2+3$, then $\frac{dy}{dx}$ is equal to.....**

(a) $(3t^2)$ **(b) (5)** (c) $(5t)$ (d) $(1/5)$

785. **If $x = 3z^2+2$ and $y = 2z^4+1$, then $\frac{dy}{dx}$ is equal to.....**

(a) $(z^2/3)$ (b) $(5z^3)$ **(c) $(4z^2/3)$** (d) $(-4/3z)$

786. **If $x = 3n^2+1$ and $y = n^3+1$, then $\frac{dy}{dx}$ is equal to.....**

(a) $(n/2)$ (b) $(2n^4)$ (c) (n) (d) (x^2)

787. **If $x = x^3+2n$ and $y = 1/n^3+2$, then $\frac{dy}{dx}$ is equal to.....**

(a) $(-3)/n^4(3n^2+2)$ (b) $(-3)/n^4(n^2+2)$ (c) $(3)/n(3n+2$ (d) $(1/x^3+2x)$

788. **If $y = 3x^3+x^2+5x-1$, then $\frac{dy}{dx}$ is equal to.....**

(a) $(9x^2+2x)$ (b) $(2x^3+9)$ (c) $(18x+2x^2)$ **(d) $(18x+2)$**

789. **If $y= x^4+3x^2+5$, then $\frac{d^2y}{dx^2}$ is equal to.....**

(a) $(4x^2+6x)$ **(b) $(12x^2+6)$** (c) $(12x+2x^2)$ (d) $(12x+2)$

790. **If $y= 3x^3+x^2+5x-1$, then $\frac{dy}{dx}$ is equal to.....**

(a) $(36x^2+4)$ (b) $(36x^2+1)$ (c) $(32x+2x^2)$ (d) $(2x^4+2x^2)$

791. **If $y= x^3+4$, then $\frac{dy}{dx}$ is equal to.....**

(a) $(6x^2+4)$ **(b) $(6x)$** (c) $(6x+2x^2)$ (d) $(2x+2)$

792. **If $y= 5x^4+2x^2$, then $\frac{d^2y}{dx^2}$ is equal to.....**

(a) $(60x^2+4)$ (b) $(20x^3+4)$ (c) $(6x+2x^2)$ (d) $(6x^2)$

793. **If $y= 6x^3+2x+1$, then $\frac{d^2y}{dx^2}$ is equal to.....**

(a) $(12x^2+2)$ (b) $(18x^2+2)$ (c) $(6x^3+2)$ **(d) $(36x)$**

794. **If $y= 3x^6+4x^3$, then $\frac{d^2y}{dx^2}$ is equal to.....**

(a) $(18x^3+1)$ (b) $(6x^3+4)$ **(c) $(90x^4+24x)$** (d) $(36x^3)$

795. **If $Y= 2/3x^3-2x$, then $f^l(x) = 0$, if x is .....**

(a) (1) (b) (2) (c) (2/1) (d) (1/2)

796. **If $f(x)= 3x^{2/}2-6x$, then $f^l(x) = 0$, if x is .....**

(a) (1) **(b) (2)** (c) (2/1) (d) (1/2)

797. **If $f(x)= x^{2+}6x$, then $f(x) = 0$, if x is .....**

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

798. **If $f(x)= f(x) = \frac{2x^2}{3} - 9x + 6$ then $f(x) = 0$, if x is .....**

(a) (-3) **(b) (3)** (c) (-1) (d) (1)

799. **If $f(x)= x^3-27x+8$, then $f(x) = 0$, if x is .....**

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

800. **If $f(x)= 2x^2-16x+7$, then $f(x) = 0$, if x is .....**

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

801. **If $y= (\log x)^4$, then $\frac{dy}{dx}$ =**

(a) $(4(\log x)^3/x)$ (b) $(4(\log x)^3/2x)$ (c) $(2(\log x)^3/x)$ (d) $(x \log x^3)$

802. **If $y=1/(\log x)$, then $\frac{dy}{dx}$ =**

(a) $(1/x \log x)$ **(b) $(-1/x(\log x)^2$** (c) $(1/x(\log x)^2)$ (d) $(1/\log x)$

803. **If $y= 3^x$, then $\frac{dy}{dx}$ =**

(a) $(3\log x)$ (b) $(\log 3)$ **(c) $(3^x \log 3)$** (d) $(\log 3)$

804. If y= e^{x^7} , then $\frac{dy}{dx}$ = 0

(a) ($7x^6e^{x^7}$) (b) ($7x^6e^7$) (c) ($7xe^{x^7}$) (d) ($6x - e^{x^7}$)

805. If y= e^{x^n} , then $\frac{dy}{dx}$ = 0

(a) (ne^{x^n-1}) **(b) ($nx^{x-1}e^{x^n}$)** (c) ($nx^{-1}x$) (d) ($e^{x^n} + x$)

806. If P is the price, x being the quantity demanded, total revenue being px, then the price elasticity of total demand curve 14x = 40-2p=0 can be expressed as
(a) (p/7x) (b) (-7x/p) (c) (7p/x) (d) (x/p)

807. If P is the price, x being the quantity demanded. The price elasticity of the demand curve, 10x=30-6p is equal to……
(a) (3p/3x) (b) (-3p/x) **(c) (-3p/5x)** (d) (5x/3)

808. If P is the price, x being the quantity of demand Revenue = PX. Price elasticity of the demand curve, 4x=10-5p, can be expressed as ……
(a) (5p/4x) (b) (-6p/x) (c) (-3p/5x) (d) (4p/5x)

809. Find elasticity of demand with respect to price at point p=6 for demand curve =x= $\left(\frac{5}{p-4}\right)$

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

810. Find elasticity of demand with respect to price at point p=6, for demand curve =x=6/(p+4)=0)
(a) (3/2) **(b) (3/5)** (c) (1/3) (d) (0)

811. Find elasticity of demand with respect to price at point p=6, for demand curve =x=9/(p+4)=0)
(a) (0.6) (b) (0.2) (c) (1) (d) (0.4)

812. A firm's variable cost $c=x^3-x^2-5x$. The level of output at which average variable cost is minimum is
(a) (2 ton) **(b) (5/3 ton)** (c) (1 ton) (d) (3/2 ton)

813. Evaluate $\lim_{x \to 2}(3x+6)$
(a) 1 (b) 10 **(c) 12** (d) 14

814. $\lim_{x \to 5}(1/x - 5)$ is equal to
(a) ∞ (b) 0 (c) 1 (d) -1

815. $\lim_{x \to 0}(e^x - 1/x)$ is equal to
(a) 0 **(b) 1** (c) 2 (d) -1

816. lim f(x) when f(x) = -5
(a) -5 (b) 4 (c) 5 (d) -1

817. $\lim_{x \to 2} f(x^2)$ when f(x) = 2
(a) -4 (b) 3 (c) 2 **(d) 4**

818. $\lim_{x \to 2}(x^2 - 3)/(x+1) =$

(a) 1/3 (b) 2/3 (c) -1/3 (d) ¼

819. $\lim_{x \to 3} (x^3 - 4) / (x + 1)$ is equal to

(a) 4/23 (b) 2/23 (c) 1/8 **(d) 23/4**

820. $\lim_{x \to 2} (x^3 + 2) / (x^2 - 1)$ is equal to

(a) 11 (b) 12 (c) 23 **(d) 10/3**

821. $\lim_{x \to 1} (x^3 + 2) / (2x^2 - 1)$ is equal to

(a) 3 (b) 2 (c) -3 (d) none

822. $\lim_{x \to \infty} (1 + 4/x)^x =$

(a) e^4 (b) 2 (c) e^5 (d) 4

823. $\lim_{x \to \infty} \frac{(2x^3 - 5x^2 + 2x)}{(3x^3 - 2x^2 + 5x)} =$

(a) 2/4 **(b) 2/3** (c) 1/3 (d) 0

824. $\lim_{x \to 0} (2x^2 - 1)/x =$

(a) Log x (b) 1 **(c) log e^2** (d) -1

825. $\lim_{x \to 2} (e^{x^2} + 3x + 2) =$

(a) e^2 **(b) e^{12}** (c) e^5 (d) e^1

826. $\lim_{x \to 0} (e^{3x-1})/x) =$

(a) 1 (b) 6 **(c) 3** (d) 7

827. $\lim_{x \to 0} (8^x - 2^x)/6^x - 2^x) =$

(a) (log3/log4) **(b) (log4/log3)** (c) (log2/log2) (d) (log2/log3)

828. $\lim_{x \to 5} \sqrt{x^2 - 4} =$

(a) $\sqrt{21}$ (b) $\sqrt{20}$ (c) $\sqrt{19}$ (d) $\sqrt{18}$

829. $\lim_{x \to 6} (x^2 - 7x + 12)/(x - 5) =$

(a) 29 (b) 25 **(c) 6** (d) -24

830. $\lim_{x \to -9} (x - 9)/(x^2 - 81) =$

(a) ∞ (b) 0 (c) 1 (d) not exist

831. $\lim_{x \to 7} (\frac{1}{7} + \frac{1}{7^2} + \frac{1}{7^3} + ... + \frac{1}{7^n}) =$

(a) 4/7 **(b) 1/7** (c) 2/11 (d) 2/7

832. $\lim_{x \to 2} (x^2 + 5x + 6)/(x^2 + 4x + 4) = (x + 3)/(x + 2) =$

(a) 5/4 (b) 4/3 (c) 4/5 (d) 1/5

833. $\lim_{x \to 0} (\sqrt{1-x} - \sqrt{1+x})/x =$

(a) 1 **(b) -1** (c) 1/5 (d) 1/3

834. $\lim_{x \to 0} x\log x =$

(a) 1 (b) -1 **(c) 0** (d) 2

835. $\lim_{x \to \infty} x^{e^{-x}} =$

(a)0 (b) 2 (c) 1 (d) -1

836. $\lim_{x \to 12} \frac{x + 12}{x^2 - 144} =$

(a) 1/124 (b) ¼ **(c) -1/24** (d) 12

837. $\lim_{x \to \infty} (x + 5)/(x + 1)^{x+3} =$

(a) e^4 (b) e^{-4} (c) 1 (d) 0

838. **Statistics is derived from**

(a) Latin word status (b) Italian statista **(c) Both** (d) None

839. **Statista or status means**

(a) Physical state **(b) Political state** (c) Secular state (d) Federal state

840. **Class mark is**

(a) A midpoint of class interval (b) Upper point of class interval (c) Lower class (d) None

841. Width of class interval is

(a) Difference between lower and upper limit	(b) Midpoint of upper and lower limit and lower limit	(c) Three fourth of difference between upper and lower limit	(d) None

842. Under exclusive class interval method

(a) Lower limit of one is lower limit of other	**(b) Lower limit of one is upper limit of other**	(c) Lower limit of one is midpoint of other	(d) None

843. Open end class interval is one

(a) Which does not have upper limit	(b) Which does not have lower limit	**(c) Which does not have upper and lower limit**	(d) None

844. In discrete series-frequency

(a) Can take any Value	**(b) Frequency can take only some defined value**	(c) Both	(d) None

845. Median is

(a) Average point point	**(b) Midpoint**	(c) Most likely point	(d) Most remote

846. Mode is the value which

(a) Is a mid point	**(b) Occur the most Likely**	(c) Average of all	(d) Most remote

847. A variable which can assume any value between two given value is called

(a) Continuous	(b) Discrete Value	(c) Random	(d) None

848. A variable which can have only defined value is called

(a) Discrete variable	(b) Continuous variable	(c) Random variable	(d) None

849. Histogram consists of a set of rectangle having

(a) Bases on X axis and with centre at the class mark and length equal to the class interval	(b) Area proportionate to class frequency	(c) Either of these two	**(d) Both**

850. Standard deviation is used to measure the

(a)Degree of variation or uniformity in data	(b) Mode value	(c) Extent of extremes values	(d) All the three

851. A frequency curve having two maximum is called

(a) A bimodal frequency curve **Frequency curve**	(b) Multimodal frequency curve	(c) Symmetrical curve	(d) Skewed

852. A U shaped frequency curve can have

(a) Maxima at both maxima **the ends only**	(b) No maxima	(c) One maxima	(d) More than one

853. A J shaped curve has maxima at

(a) One end only	(b) Both end	(c) Both	(d) None

854. **A ratio compound of itself is called**
(a) Duplicate ratio (b) Sub- duplicate ratio (c) Sub-triplicate ratio (d) Triplicate ratio

855. **If a, b and c are in continuous proportion, then the middle term b is called**
(a) Mean proportion (b) Mode (c) Median (d) None

856. **The logarithm of any number to the same base is**
(a) Unity (b) Zero (c) Infinite (d) Non existence

857. **Logarithms of number to the base ..... are known as common logarithm**
(a) (0) **(b) (10)** (c) 100 (d) 1

858. **The whole or the integral part of a logarithm is called**
(a) Characteristic (b) Mantissa (c) Both (d) None

859. **The decimal part of a logarithm is called**
(a) Characteristic **(b) Mantissa** (c) Both (d) None

860. **If the number of elements in a sequence is finite, the sequence is called**
(a) Infinite sequence **(b)Finite sequence** (c) Limited sequence (d) None

861. **If the number of element of a series is unending the sequence is called**
(a) Infinite series (b) Undefined series (c) Unending series (d) Expanding series

862. **The empty set is one which contains..... element**
(a) 1 (b) 2 (c) 3 **(d) 0**

863. **A Binomial distribution is symmetrical when P=**
(a) 0.10 (b) 0.80 **(c) 0.50** (d)1

864. **Sleeping habit of a person is**
(a)An attribute (b) A variable (c) Continuous variable (d) Discrete variable

865. **Weight of a person is**
(a) An attribute **(b) Continuous variable** (c) Variable (d) Discrete variable

866. **Death toll due to earth quack is a**
(a) An attribute (a) Continuous variable (c) Variable **(d) Discrete variable**

867. **The term Statistics can be used in ..... sense**
(a) Singular only (b) Plural only **(c) Both** (d) None

868. **.....in a quantitative information about some particular characteristics under consideration**
(a) Statistic **(b) Data** (c) Variable (d) Attribute

869. **Which of the following is not a method for collection of primary data**
(a) Interview method (b) Questionnaire (c) Observations **(d) None**

870. **Data arranged region wise is known as**
(a) Regional data (b) Local data **(c) Geographical data** (d) All the three

871. **Which of the following is a qualitative data**
(a) Salary (b) Profits (c) Weight **(d) Drinking habits**

872. **Which of the following is a quantitative data**
(a) Age (b) Weight (c) Height **(d) All the three**

873. **Presentation of data with the help of paragraphs is known as**

(a) Textual Presentation	(b) Diagrammatical presentation	(c) Pictorial presentation	(d) None

874. **Presentation of data with the help of pictures is known as**

(a) Textual Presentation	(b) Diagrammatical presentation	**(c) Pictorial presentation**	(d) None

875. **Horizontal bar diagrammed is used for**

(a) Qualitative data	(b) Quantitative data	(c) Both	(d) None

876. **For time series data…….. is used**

(a) Bar diagram	(b) Vertical diagram	(c) Pie chart	(d) Line diagram

877. **Bell shaped frequency curve is used for distribution of**

(a) Height	(b) Marks	(c) Profit	**(d) All the three**

878. **Frequency distribution may be defined as**

(a) Tabular Representation of Statistical data	(b) Graphical representation of statistical data	(c) Pictorial representation of statistical data	(d) Line diagram

879. **Quartiles are values dividing a given set of data into….. equal parts**

(a) 4	(b) 6	(c) 3	(d) 2

880. **Deciles are the values dividing a given set of observations into**

(a) 10	(b) 5	(c) 6	(d) 4

881. **Percentiles divides a set of observations into**

(a) 100	(b) 80	(c) 60	(d) 10

882. **The middle most value of a frequency distribution table is known as**

(a) Mean	**(b) Median**	(c) Mode	(d) Range

883. **Which of the following measures of averages divide the observation into two parts**

(a) Mean	**(b) Median**	(c) Mode	(d) Range

884. **Which of the following measures of averages divide the observation into four equal parts**

(a) Mean	(b) Median	(c) Mode	**(d) Quartile**

885. **The first quarter is known as**

(a) Lower quarter	(b) Middle quarter	(c) Upper quarter	(d) None

886. **The third quarter is known as**

(a) Lower quarter	(b) Middle quarter	**(c) Upper quarter**	(d) None

887. **Cumulative frequency distribution corresponding to first quarter is---------- % of the total observations**

(a) 25%	(b) 45%	(c) 50%	(d) 75%

888. **If the average weight of 150 students is 60 kg., find the number of boys and girls in the school if the average weight of boys and girls is 75 and 52.5 kg. respectively**

(a) (50,100)	(b) (100,50)	(c) (40,110)	(d) (90,60)

889. **If the average weight of 180 students is 75 kg., find the average weight of the girls if the average weight of the boys is 85 kg. and number of boys and girls in the school are 80 and 100 respectively**

(a) 64 kg.	(b) 71 kg.	**(c) 67 kg.**	(d) 65 kg.

890. **The average marks obtained by the students of a school of CBSE exams are 88% and the average marks obtained by the boys students are 76%, the average marks obtained by the girls will be …….if there are 90 girls and 60 boys who appeared in CBSE board exams**
(a) 86 (b) 88 (c) 92 **(d) 96**

891. **If the average marks obtained by the students of a school of CBSE exams are 85% and the average marks obtained by the girls students are 90%, the average marks obtained by the boys will be…….if there are 80 girls and 120 boys students who appeared in CBSE board exams**
(a) 80 **(b) 77.5** (c) 90 (d) 96

892. **If the average Marks obtained by the students of a school of CBSE exams are 85% and the average marks obtained by the girls students are 90%, the average marks obtained by the boys will be……..if there are 80 girls and 70 boys students who appeared in CBSE board exams**
(a) 81 (b) 77.5 **(c) 79.28** (d) 93

893. **Arithmetic mean of the series 1, 3, 5, 7, 9 is ……..**
(a) 5 (b) 6 (c) 5.5 (d) 6.5

894. **GM of the series 1,3,5,7,9 is …….**
(a) 945 (b) $(315)^{1/5}$ **(c) $(945)^{1/5}$** (d) 90/300

895. **Harmonic means of the series 1, 3, 5, 7, 9 is …….**
(a) 1575/563 (b) 325/75 (c) 88/320 (d) 90/300

896. **Arithmetic mean of the series 3, 4, 5, 6, 7 is ……**
(a) 5 (b) 7 (c) 5.5 (d) 6.5

897. **Geomatric mean of the series 3, 4, 5, 6, 7 is …….**
(a) 2520 $^{1/5}$ (b) 7 (c) $2120^{1/6}$ (d) 6

898. **Harmonic mean of the series 3, 4, 5, 6, 7 is ……**
(a) 2100/ 459 (b) 1800/ 654, (c) 2000/ 558 (d) 6.5

899. **The Arithmetic mean for the series 3, 5, 5, 2, 6, 2, 9, 5, 8, 6, is…….**
(a) 5. 1 (b) 5 (c) 4. 9 (d) 4. 6

900. **The median value for the series 3, 5, 5, 2, 6, 2, 9, 5, 8, 6 is …**
(a) 5.1 **(b) 5** (c) 4.9 (d) 4.6

901. **The mode for the series 3, 5, 6, 2, 6, 2, 9, 5, 8, 6 is**
(a) 5.1 (b) 5 **(c) 6** (d) 8

902. **The Arithmetic mean for the series 51.6, 50.3, 48.9, 48.7, 48.5 is…….**
(a) 49.8 (b) 50 (c) 48.9 (d) 49.6

903. **The Median for the series 51.6, 50.3, 48.9, 48.7, 49.5, is……**
(a) 49.8 (b) 50 (c) 48.9 **(d) 49.6**

904. **The Arithmetic mean for the series 51.6, 50.3, 48.9, 48.7, 49.5 is……..**
(a) 48.8 (b) 50 **(c) 49.9** (d) 49.8

905. **The Mode for the series 51.6, 50.3, 48.9, 48.7, 49.5 is……**
(a) 48.8 (b) 50 (c) None (d) 49.5

906. **The Harmonic mean for the series 6, 5, 3, 6, 7, 10 and 12 is**
(a) 5.87 (b) 6.21 (c) 5.12 (d) 5.98

907. **In question No. 906 the mode is……..**
(a) 6 (b) 5 (c) 5.9 (d) 5.98

908. **The harmonic mean of the data 3.2, 5.2, 4.2, 6.1, 4.8 is……..**

(a) 4.48 (b) 4.59 (c) 4.64 (d) 5.1

909. **If average salary of Man and women works in a company is ₹ 19,960, with average salary of men ₹ 25,000 and average salary of women ₹16,000, find the number of men and women if there are total 100 number of workers in the company**

(a) (44,56) **(b) (56,44)** (c) (45,55) (d) (60,40)

910. **Find Arithmetic mean wages of the workers from the following details**

Wages (₹)	3000	2000	6000	4000	7000
No. of workers	5	5	4	6	5

(a) ₹4400 (b) ₹4320 (c) ₹4500 **(d) ₹4380**

911. **Find the Arithmetic mean weight of the students from the following details:**

Weight	65kg.	66kg.	69kg.	72kg.	73kg.
No. of students	5	6	4	5	5

(a) 66 kg. (b) 67 kg. (c) 68 kg **(d) 68.88kg**

912. **The average weight of a class of 25 students is 69 kg. find the value of x from the details.**

Weight	65kg.	X	68.5kg.	71.5kg.	73.5kg.
No. of students	5	6	4	5	5

(a) 66 kg. (b) 67.05 kg. (c) 65.88 kg. (d) 66.83 kg.

913. **Calculate Median value from the following frequency distribution**

X	4.5	5	5.5	6	6.5	7	7.5	8.0
Y (Frequency)	4	3	14	28	23	35	8	10

(a)6.5 (b) 6 (c) 5.5 (d) 7

914. **Calculate Median value from the following frequency distribution**

X	3	5	7	9	11	13
Y (Frequency)	4	3	5	2	3	3

(a) 6.5 (b) 6 (c) 5.5 **(d) 7**

915. **Calculate Median value from the following frequency distribution**

X	10-15	15-20	20-25	25-30	30-35
Y (Frequency)	5	3	3	2	2

(a) 18.5 **(b) 19.166** (c) 19.5 (d) 19.28

916. **Calculate arithmetic mean value from the following frequency distribution**

X	10-15	15-20	20-25	25-30	30-35
Y (Frequency)	5	3	3	2	2

(a) 20.16 (b) 19.166 (c) 21.23 (d) 19.28

917. **Calculate arithmetic mean salary from the following frequency distribution**

X(₹ in 000)	10-20	20-30	30-40	40-50	50-60	60-70
Y (Frequency)	2	3	6	5	2	2

(a) 36.5 (b) 36.00 (c) 35.5 **(d) 39.00**

918. **Find the mean deviation of the series 15,20,18,10, 22**

(a) 3.4 **(b) 4.4** (c) 4.2 (d) 3.2

919. **Find the value of X mean of the series 7,20,18,10, x is 14**

(a) 15 (b) 11 (c) 14 (d) 16

920. **What is the standard deviation of the data 10,12,5,8,15**

(a) 3.09 **(b) 3.41** (c) 2.67 (d) 3.10

921. If X and Y are so related that Y = 2x + 6 and mode x=15, mode y is …..

(a) 36 (b) 30 (c) 38 (d) 32

922. If AM and HM are 10 and 4.9 respectively, GM will be …

(a) 4.1 (b) 13 **(c) 7** (d) 14.75

923. **$\int 3x^2$ dx is equal to ……**
(a) (x^3+c) (b) ($2X^2$+c) (c) ($3x^2+x^3$+c) (d) ($4x^3$+4)

924. **$\int 4-2x+3x^2$ is equal to ……**
(a) ($5x^3+x^2$) **(b) ($4x-x^2+x^3$)** (c) (x^3+x^2+4x) (d) (x^3+4x)

925. **$\int(3+4x^2)dx$ is equal to ……**
(a) (x^4+c) **(b)** $\left[3x+\frac{4x^3}{3}\right]$ (c) (x^3+x^2+4x) (d) (x^3+x)

926. **$\int x^{1/2}+3/x$ is equal to ……**
(a) (3logx+2/3 $x^{3/2}$) +c (b) (3/2x2/3+logn^2) (c) (logx+2/$3x^2$) (d) (x^3+2)

927. **$\int 1/(3x+2)dx$ is equal to ……**
(a) (log (3x+2)) **(b) (1/3 log(3x+2)+c)** (c) ($3x^2+x^3$+c) (d) (log(3x+4x)

928. **$\int 1/(3x-2)dx$ is equal to ……**
(a) (1/3 log(3x-2)+c) (b) (log (3x+2)) (c) (1/3 log (3x-2)) (d) (log(3x+1))

929. **$\int(2x-3)^2dx$ is equal to ……**
(a) (1/6 $(2x-3)^3$+c) (b) ((2x-3)+x) (c) $((2x-c)^3/3$ (d) (None)

930. **$\int(3x-5)^3dx$ is equal to ……**
(a) (1/12 $(3x-5)^4$+c) (b) ((3x-5)/12-c) (c) $((3x+5)^3/3)$+c (d) $((3x+5)^3$+c

931. **$\int(e^{3x+2})dx$ is equal to ……**
(a) (e^{3x+2})+c (b) $3e^{3x+c}$+c) (c) (e3^{x+c}+c) **(d) (e^{3x+2})/3)+c**

932. **$\int(e^{5x+4})dx$ is equal to ……**
(a) (1/(e^{3x+2}+c) (b) (e^{5x+c}+c) (c) (1/5(e^{3x+2}+c) (d) (1/5e^{5x+4})

933. **$\int x^{ex}dx$ is equal to ……**
(a) (e^x(x-1)+c) (b) (e^x(x)+c) **(c) (e^x(x-2)+c)** (d) (e^x+c)

934. **$\int$Log xdx is equal to ……**
(a) (logx-x+c) (b) (xlogx+x+c) (c) (xlogx-x+c) (d) (None)

935. **$\int(1/(9x^2-25)dx$ is equal to ……**
(a) (1/30 log (3x-5)/(3x+5)+c (b) (1/30 log (3x-5)/(3x+5)+c (c) (1/30 log (3x-5)/(x-5) (d) (1/3 log (3x-5)/(3x+5)+c

936. **$\int(e^x/e^{2x}-1)$ is equal to ……**
(a) (log (e^{x+1})/(e^{x-1})) **(b) (1/2 log (e^{x+1})/(e^{x-1}))** (c) (log (e^{x-1})/(e^{x-1})) (d) (log (e^{x+1})/(e^{x+1}))

937. **$\int(x+3)^6dx$ is equal to ……**
(a)($2x^2$+3/5x+c) **(b) ($(3+x)^7/7$)+c** (c) (x^3+e^{x+4}) (d) $1/6(3+x)^7$

938. **$\int(1/(25x^2-16)dx$ is equal to ……**
(a) Log(5x+($25x^2$+16)$^{1/2}$+c **(b) Log(5x+($25x^2$+16)$^{1/2}$+c** **(c) (1/5 log[5x+$25x^2$-16] +c** (d) Log(5x+($25x^2$-16)+c

939. $\int(x+3)^6$

(a) (3+3/5x)+c **(b) $((3+x)^7/7)+c$** (c) $(x+3)^4$) (d) (None)

940. $\int(e^x((x+1)/(x+2)^2 dx$ **is equal to .....**

(a) (e^x-(e^x/(x+1)+c **(b) $(e^x 2^{ex}/(x+1)+c$** (c) (2e^x-(e^x/(x)+c (d) (3e^x-(e^x/(x+1)+c

941. $\int(((xe2^x/(1+2x)^2)dx$ **is equal to .....**

(a) $(e^{2x}/4(1+2x)+c$ (b) (e^x-3^{ex}(2x+1)+c (c) (e^{2x}/4(1+2x) (d) None

942. $\int_1^2 xe^x$ **dx is equal to .....**

(a) $(2e^2)$ (b) (2e^x) (c) (2) (d) (e^3)

943. $\int_1^3 xe^x$ **dx is equal to.....**

(a) 3e^3 (b) 3xe^3 **(c) (e^3)** (d) (0)

944. $\int_1^x xe^x$ **dx is equal to .....**

(a) ½ (e-1) (b) (e^2) (c) (e^3) (d) 2(e-1)

945. $\int_1^4$ **6dx is equal to .....**

(a) (18) (b) (24) (c) (11) (d) (44)

946. $\int_2^3$ **3dx is equal to .....**

(a) (11) (b) (21) **(c) (3)** (d) (4)

947. $\int_0^1$ **1/(3x+2)dx is equal to .....**

(a) (1/3 log 5/2) (b) (1/3 log 3) (c) (1/4 log e^3) (d) (1/2 log x^3)

948. $\int_0^1$ **1/(5x+2) dx is equal to .....**

(a) (1/3 log 5/2) **(b) (1/5 (log 7)/2** (c) (1/5 log 5) (d) (1/5 log 4)

949. $\int_1^2$ **$1/x^2$ dx is equal to .....**

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

950. $\int_0^1$ **xe^x dx is equal to .....**

(a) (-1) **(b) (1)** (c) (2) (d) (1/2)

951. $\int_2^4$ **3dx is equal to .....**

(a) (3) (b) (11) **(c) (2)** (d) (1/2)

952. The marginal cost function is given by mc= $3x^2+5x$ and fixed cost is ₹5. The total cost function can be expressed as

(a) $x^3+\frac{5x^2}{2}+5x$ (b) x^3+5x^2+5 (c) $3x^2+5x$ (d) $3x^2+5$

953. In question No.952 the total cost of 30 units will be.....

(a) (₹30,750) (b) (₹31,550) (c) (₹32,550) (d) (₹30,900)

954. In question No.952 the average cost is.....

(a) (₹1025) (b) (₹1150) (c) (₹1090) (d) (₹1250)

955. **The marginal cost function of a TV Cabinet is given as mc= $x^2/3-2x+500$. The total cost of production of 500 TV cabinet is ……**
(a) (₹125000000) (b) (₹425000000) **(c) (₹13880000 approx)** (d) (₹12500000)

956. **In question No.955 the average cost of production is……**
(a) (₹27777) (b) (₹28500) (c) (₹29600) (d) (₹25500)

957. **In question No.955 the cost of increasing production from 300 units to 500 units is……..**
(a) ₹1,71,111 (b) ₹2,10,000 (c) ₹1,80,000 (d) ₹1,90,000

958. **Determine the total cost of production of 200 units if Marginal cost is given as mc=2x+5**
(a) 5000 (b) 4600 (c) 6500 (d) 5500

959. **What is the cost of production of one toy in question No.958**
(a) 20 **(b) 25** (c) 45 (d) 50

960. **Determine the marginal cost of production of 1000 toys in Q.No.958**
(a) (2005) (b) (2105) (c) (2410) (d) (2900)

961. **Determine the marginal cost of production of 120 pen, if mc=1+x/2000+$e^{-0.03x}$**
(a) (₹139.0) (b) (₹160.0) **(c) (₹133.84)** (d) (₹169)

962. **What is the cost of 1 pen in Q.No.961?**
(a) ₹2.00) **(b) (₹1.33)** (c) (₹1.84) (d) (₹1.95)

963. **The marginal cost of production is mc=0.3x+4 determine the cost involved to increase production from 70 to 100 units**
(a) (₹900) **(b) (₹885)** (c) (₹1015) (d) (₹1000)

964. **Which of the following is true for a poison distribution**
(a) Mean>Variance (b) Mean<Variance **(c) Mean=Variance**
(d) None

965. **Which of the following is true for a binomial distribution**
(a) Mean>Variance (b) Mean<Variance (c) Mean=Variance
(d) None

966. **In a binomial distribution mean and mode are equal only when**
(a) P=0.5 (b) p=0.9 (c) q=0.1 (d) all the situations

967. **The variance of a binomial distribution is measured by**
(a) np **(b) np(1 – p)** (c) pq (d) nq

968. **The mean of binomial distribution is measured by**
(a) np (b) npq (c) pq (d) nq

969. **If each item of the sample data or observation is decreased by 25, the Arithmetic mean will…**
(a) Remain same (b) increase by 25 **(c) decrease by 25**
(d) decrease by 25%

970. **If each item of the sample data or observation is increased by 5, the Arithmetic mean will…**
(b) Remain same **(b) increase by 5** (c) decrease by 5
(d) increase by 5%

971. **Circular test is satisfied by which of these methods ?**
(a) Laspeyres index (b) Fishers Ideal index (c) Paasches index
(d) Simple Geometric mean of price relatives

972. **Which index satisfies factor reversal test ?**

(a) Laspeyres index (b) Fishers Ideal index (c) Paasches index **(d) Simple Aggregate** **average index**

973. **To check the accuracy of index by shifting the base year, which test is used ?**
(a) **Circular test** (b) Time reversal test (c) Unit test (d) None

974. **Which of the following method of constructing index number satisfies time reversal test ?**
(a) Laspeyres index **(b) Fishers Ideal index** (c) Paasches index (d) All the three

975. **Which of these is an extension of time reversal test of index numbers**
(a) Factor reversal test **(b) Circular test** (c) None (d) Both

976. **..... Is known as positional average**
(a) **Median** (B) Mean (c) Mode (d) Range

977. **The best measure of dispersion is**
(a) Subjective (b) Objective (c) Positive **(d) (a and b)**

978. **If standard deviation of x=3, regression equation 8x – 10y + 40 =0, 40x – 30y – 200=0, find the deviation of y**
(a) **1.29** (b) 0.8 (c) 0.7 (d) 0.9

979. **If the product of two successive number is 5256, find the greatest number**
(a) **73** (b) 83 (c) 84 (d) 71

980. **The least value of the sum of a +ve number and its reciprocal is**
(a) 1 **(b) 3** (c) 3 (d) 4

981. **If the sum of two numbers is K, find the maximum of their product**
(a) K (b) 2K (c) K/2 **(d) $K^2/4$**

982. **The sum of a number and its reciprocal is 17/4. The number is**
(a) 5 **(b) 4** (c) 6 (d) 3

983. **The value of (1 + 2x/3) is equal to 7/3, when x is equal to**
(a) -2 **(b) 2** (c) 3 (d) -3

984. **If x + y =30, such that x and y are positive integers, then the minimum value of $x^2 + y^2$ is equal to**
(a) K, K-1 **(b) K/2, K/2** (c) 1, K-1 (d) none

985. **Set A has 3 elements and set B has 5 elements. Find the total no. of injection that can defined from set A to set B**
(a) **60** (b) 32 (c) 50 (d) 100

986. **The maxima value of the function $4x^3 + x^2 - 4x + 12$ is**
(a) 113/2 **(b) 376/27** (c) -2/3 (d) 43/4

987. **The minima value of the function $4x^3 + x^2 - 4x + 12$ is**
(b) 31/2 (b) 55/2 **(c) 43/4** (d) 1/2

988. **The maxima point of the function $4x^3 + x^2 - 4x + 12$ is**
(c) 3/2 (b) 5/2 **(c) -2/3** (d) 1/2

989. **The minima point of the function $4x^3 + x^2 - 4x + 12$ is**
(d) 3/2 (b) 5/2 (c) -2/3 **(d) 1/2**

990. **The marginal cost function of a TV Remote = 0.5x+30= mc. Find the cost of production of first 200 units.**
(a) (₹16000) (b) (₹14300) (c) (₹12500) (d) (₹13990)

991. **The cost of production of 1 TV remote is ……. (in Q.No.42)**
(a) (₹80) (b) (₹145) (c) (₹100) (d) (₹99)

992. **The Marginal Revenue function MR of a product is MR = 8-3x², demand function will be……**
(a) (8-4x²) (b) (8-3x²) **(c) (8x-x²)** (d) (8-2x²)

993. **The Marginal Revenue function of a product is MR= 6-2x², demand function will be……**
(a) (6x-2x²/3) **(b) 6x-** $\frac{2x^3}{3}$ (c) (6x-2x²) (d) (8/3-2x²)

994. **The demand function of product is D=12-x², the MR function will be ……**
(a) (12-x²) (b) (1-3x²) **(c) (-2x)** (d) (-3x²)

995. **The demand function is = 18-** $\frac{4x^2}{3}$ **. The MR function will be ……..**
(a) 18- $\frac{8x}{3}$ (b) (18-2x²) (c) (6x-2x²) (d) (8/3-2x²)

996. **If Marginal function is MR = 13+5x². The demand function will be…….**
(a) (13 x²/3) (b) (5x²/3) (c) (13+5x²) **(d) 13x+** $\frac{5x^3}{3}$

997. **When the selling price of a product is ₹3 and cost function y= 2550+[(x²)/50], the profit function can be written as**
(a) 3x-2550-2x²/50 **(b) 3x-2550-x²/50** (c) 3x-2550-x² (d) 3x-2550-x/50

998. **∫(log x)² is equal to ……..**
(a) (x(logx)²-2logx+c) **(b) (2x+x(logx)²-2logx+c)** (c) (2x(logx)²-2logx+c) (d) ((log x)²-2logx³)

999. **∫(logx/x²)dx is equal to ……..**
(a) (-1/x(logx+1)+c (b) (2x+x(logx)²-2logx+c) (c) (2x(logx)²-2logx+c (d) ((log x)²-2logx³)

1000. **The speed of s steamer in still water is 20 km per hr., it can go 40 km. If it can go 40 km downstream and upstream in 4 hrs and 10 minutes. Find the speed of the stream**
(a) 4 km per hr. (b) 6 km per hr. (c) 5 km per hr. (d) 3 km per hr.