



Dr.G.R.Damodaran College of Science

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I B.Sc COMPUTER SCIENCE-[2017-2020] SEMESTER I

Allied: NUMERICAL AND STATISTICAL METHODS-107B MULTIPLE CHOICE QUESTIONS

1. The number of elements in an $m \times n$ matrix is ____.

- a. mn .
- b. $m+n$.
- c. m/n .
- d. m^n .

Answer: A

2. The number of elements in a square matrix of order n is ____.

- a. n^3 .
- b. n^4 .
- c. n .
- d. n^2 .

Answer: D

3. The determinant value of the matrix $\begin{pmatrix} 0 & c & b \\ c & 0 & a \\ b & a & 0 \end{pmatrix}$ is _____.

- a. 0.
- b. $2abc$.
- c. abc .
- d. $-abc$.

Answer: B

4. The solution $\begin{pmatrix} x & 2 \\ 1 & 1 \end{pmatrix} = 0$ is ____.

- a. 0.
- b. 1.
- c. -1.
- d. 2.

Answer: D

5. The order of the matrix $B = [1 \ 2 \ 5 \ 7]$ is _____.

- a. 1×4 .
- b. 4×1 .
- c. 2×1 .
- d. 1×1 .

Answer: A

6. The type of the matrix $\begin{pmatrix} \sqrt{2} & 0 & 0 \\ 0 & \sqrt{3} & 0 \\ 0 & 0 & \sqrt{3} \end{pmatrix}$ is _____.

- a. scalar matrix.
- b. diagonal matrix.
- c. unit matrix.

d. null matrix.

Answer: B

7. The minor of 2 in $\begin{pmatrix} 2 & -3 \\ 6 & 0 \end{pmatrix}$ is_____.

a. 0.

b. 1.

c. -3.

d. 2.

Answer: A

8. The rank of the matrix $\begin{pmatrix} 1 & -1 & 2 \\ 2 & -2 & 4 \\ 4 & -4 & 8 \end{pmatrix}$ is _____.

a. 4.

b. 1.

c. 3.

d. 2.

Answer: B

9. Inverse of $\begin{pmatrix} 3 & 1 \\ 5 & 2 \end{pmatrix}$ is_____.

a. $\begin{pmatrix} -2 & 5 \\ 1 & -3 \end{pmatrix}$

b. $\begin{pmatrix} -3 & 5 \\ 1 & -2 \end{pmatrix}$

c. $\begin{pmatrix} 3 & -1 \\ -5 & -3 \end{pmatrix}$

d. $\begin{pmatrix} 2 & -1 \\ -5 & 3 \end{pmatrix}$

Answer: D

10. Every ____ matrix satisfies its own characteristic equation.

a. scalar matrix.

b. diagonal matrix.

c. unit matrix.

d. square matrix.

Answer: D

11. Matrix A is of order 2*3 and B is of order 3*2 then BA is of order_____.

a. 3*2.

b. 2*3.

c. 2*2 .

d. 3*3.

Answer: D

12. The trace of a _____ matrix is the sum of its diagonal elements.

a. scalar matrix.

b. diagonal matrix.

c. unit matrix.

d. square matrix.

Answer: D

13. The error in the trapezoidal rule is of the order_____.

a. h.

b. h².

- c. h^3 .
- d. h^4 .

Answer: B

14. The error in the Simpson's rule is of the order_____.

- a. h .
- b. h^2 .
- c. h^3 .
- d. h^4 .

Answer: D

15. _____ method is used for finding the dominant Eigen-value of a matrix.

- a. Gauss Elimination Method.
- b. Gauss Jordan Method.
- c. Newton Raphson Method.
- d. Power method.

Answer: D

16. Simpson's $1/3^{\text{rd}}$ rule of integration is exact for all polynomials of degree not exceeding _____.

- a. 4.
- b. 1.
- c. 3.
- d. 2.

Answer: D

17. Simpson's $3/8^{\text{th}}$ rule is applicable only when_____.

- a. n is multiple of 3.
- b. n is multiple of 6.
- c. n is multiple of 8.
- d. n is multiple of 24.

Answer: A

18. In Simpson's $1/3^{\text{rd}}$ rule the number of intervals must be _____.

- a. multiple of 3.
- b. multiple of 6.
- c. odd.
- d. even.

Answer: D

19. The method used to solve a system of simultaneous linear equations are known as_____ method.

- a. direct.
- b. indirect.
- c. iterative.
- d. interpolation.

Answer: A

20. The modification of Gauss elimination method is_____.

- a. Gauss method.
- b. Gauss Jacobi.
- c. Gauss Jordan Method.
- d. Gauss Siedel Method.

Answer: C

21. Gauss elimination and Gauss Jordan methods are _____.

- a. direct.

- b. indirect.
- c. iterative.
- d. interpolation.

Answer: A

22. _____ is used to denote the process of finding the values inside the interval (X_0, X_n) .

- a. Interpolation.
- b. Extrapolation.
- c. Iterative.
- d. Polynomial equation.

Answer: A

23. The forward difference operator denoted by the symbol is _____.

- a. Δ
- b. Ω
- c. ∂
- d. ∞ .

Answer: A

24. LaGrange's interpolation is used to interpolate the values of _____ intervals.

- a. equal.
- b. unequal.
- c. open.
- d. closed.

Answer: B

25. In Newton's forward interpolation formula, the first and second terms will give the _____ interpolation.

- a. linear.
- b. parabolic.
- c. hyperbolic.
- d. non-linear.

Answer: A

26. The Runge-kutta method of second order is nothing but _____.

- a. Euler Method.
- b. Taylor method
- c. modified Euler method
- d. improved Euler method.

Answer: C

27. The harmonic mean is the reciprocal of the _____ of the values.

- a. mean.
- b. median.
- c. mode.
- d. geometric mean.

Answer: A

28. Which average is affected most by extreme observations?.

- a. mean.
- b. median.
- c. mode.
- d. geometric mean.

Answer: D

29. Which of the following is the most unstable average?.

- a. mean.

- b. median.
- c. mode.
- d. geometric mean.

Answer: C

30. For dealing with qualitative data the best average is_____.

- a. mean.
- b. median.
- c. harmonic mean.
- d. geometric mean.

Answer: B

31. In a moderately asymmetrical distribution is_____.

- a. $AM > GM > HM$.
- b. $AM < GM < HM$.
- c. $HM > GM > AM$.
- d. $AM \geq GM \geq HM$.

Answer: D

32. Suppose a teacher records the following scores for a test 87, 42, 55,87,99,98,87,55,87 the mode is _____.

- a. 99.
- b. 98.
- c. 42.
- d. 87.

Answer: D

33. The empirical relation between the mode, median, and mean is_____.

- a. $mean = mode = median$.
- b. $mode = 3median - 2mean$.
- c. $mean = 3mode - 2median$.
- d. $mean = median - 3mode$.

Answer: B

34. The positive square root of the variance_____.

- a. mean.
- b. range.
- c. standard deviation.
- d. median.

Answer: C

35. Sum of deviations about mean is_____.

- a. 0.
- b. 1.
- c. maximum.
- d. minimum.

Answer: A

36. Which is the simplest method of measures of dispersion?

- a. mean.
- b. range.
- c. standard deviation.
- d. variance.

Answer: B

37. Correlation coefficient lies between_____.

- a. 0 & 1.

- b. 0 & 2.
- c. -1 & 1.
- d. 1 & 2.

Answer: C

38. If one of the rank correlations is greater than unity, then the other must be _____.

- a. less than unity.
- b. greater than unity.
- c. zero.
- d. one.

Answer: A

39. Regression coefficient is independent of _____.

- a. origin.
- b. scale.
- c. origin & scale.
- d. neither origin nor scale.

Answer: A

40. The geometric mean of the two rank correlation $b(xy)$ & $b(yx)$ is equal to_____.

- a. r .
- b. r^2 .
- c. r^3 .
- d. r^4 .

Answer: B

41. A correlation coefficient is independent of_____.

- a. origin.
- b. scale.
- c. origin & scale.
- d. neither origin nor scale.

Answer: C

42. Which of the following is true?

- a. $r = \sqrt{b(xy)b(yx)}$.
- b. $r^2 = \sqrt{b(xy)b(yx)}$.
- c. $1/r = \sqrt{b(xy)b(yx)}$.
- d. $r = [b(xy)b(yx)] = 1$.

Answer: A

43. A correlation is perfect and positive, if $r =$ _____.

- a. -1.
- b. 0.
- c. +2.
- d. +1.

Answer: D

44. The product moment correlation coefficient is obtained by the formula_____.

- a. $r = \sum \frac{XY}{xy}$.

$$b. r = \frac{\sum XY}{N \sum X \sum Y}.$$

$$c. r = \frac{\sum XY}{N \sum X}.$$

$$d. r = \frac{\sum XY}{N \sum Y}.$$

Answer: B

45. Both the regression coefficient cannot exceed_____.

- a. one.
- b. -1.
- c. 0.
- d. maximum.

Answer: A

46. The average relationship between two variable is_____.

- a. correlation.
- b. rank correlation.
- c. regression.
- d. both correlation and regression.

Answer: C

47. The relationship between 3 or more variables is studied with the help of _____ correlation.

- a. simple.
- b. multiple.
- c. rank.
- d. partial.

Answer: B

48. The _____ is the reciprocal of arithmetic mean of the values.

- a. median.
- b. mode.
- c. geometric mean.
- d. harmonic mean.

Answer: D

49. Newton forward interpolation is used for_____ intervals.

- a. equal.
- b. unequal.
- c. open.
- d. closed.

Answer: A

50. Given (x_0, y_0) and (x_1, y_1) the LaGrange's interpolation formula is _____.

- a. $y = \frac{x - x_1}{x_0 - x_1} y_0 + \frac{x - x_0}{x_1 - x_0} y_1.$
- b. $x = \frac{x - x_1}{x_0 - x_1} y_0 + \frac{x - x_0}{x_1 - x_0} y_1.$

$$c. y = \frac{x - x_1}{x_0 - x_1} x_0 + \frac{x - x_0}{x_1 - x_0} x_1.$$

$$d. y = y_0 + p\Delta y_0 + p^2\Delta^2 y_0.$$

Answer: A

51. The general problem of finding equations of approximating curves which fit a given data is called_____.

- a. curve fitting.
- b. approximating curve.
- c. empirical relation.
- d. linear form.

Answer: A

52. The best representative curve to the set of point is that for which E the sum of the squares of the residuals is a minimum. This is known as_____.

- a. curve fitting.
- b. empirical relation.
- c. linear form.
- d. principles of least squares.

Answer: D

53. The _____ matrix in the normal equations is symmetric.

- a. square.
- b. scalar .
- c. co-efficient.
- d. upper triangular.

Answer: C

54. In a ordinary differential equations the first category method is_____.

- a. Taylor Method .
- b. Euler Method.
- c. Runge-Kutta Method.
- d. Pointwise Method.

Answer: A

55. A _____ of differential equations is a function which satisfies the differential equations.

- a. solution.
- b. general solution.
- c. particular solution.
- d. complete solution.

Answer: A

56. A _____ of differential equation is a solution got form the general solution by giving particular values to the arbitrary constant.

- a. solution.
- b. general solution.
- c. particular solution.
- d. complete solution.

Answer: C

57. For unequal intervals, we can use _____ to get the derivative value.

- a. Newton Forward Interpolation Formula.
- b. Newton Backward Interpolation Formula.
- c. Newton Forward Difference Formula.
- d. LaGrange's Interpolation Formula.

Answer: D

58. To find the derivative at the end of the table we use _____ formula.

- a. Newton Forward differentiation Formula.
- b. Newton Backward differentiation Formula.
- c. Newton Forward Difference Formula.
- d. LaGrange's Interpolation Formula.

Answer: B

59. If the derivative is required at a point to the starting value in the table, we use _____ formula.

- a. Newton Forward differentiation formula.
- b. Newton Backward differentiation Formula.
- c. Newton Forward Difference Formula.
- d. LaGrange's Interpolation Formula.

Answer: A

60. _____ rule is derived from Newton's Cotes Formula.

- a. Trapezoidal rule.
- b. Simpson's (1/3)rd rule.
- c. Romberg's Integration.
- d. Simpson's (3/8)th rule.

Answer: A

61 The degree of $y(x)$ in Trapezoidal Rule is _____.

- a. 1.
- b. 2.
- c. 3.
- d. 6.

Answer: A

62. The degree of $y(x)$ in Simpson's (1/3)rd Rule is _____.

- a. 1.
- b. 2.
- c. 3.
- d. 6.

Answer: B

63. The degree of $y(x)$ in Simpson's (3/8)th is _____.

- a. 1.
- b. 2.
- c. 3.
- d. 6.

Answer: C

64. Interpolating polynomial is also known as _____.

- a. smoothing function.
- b. interpolating function.
- c. collocation polynomial.
- d. interpolating formula.

Answer: C

65. In Lagrange's interpolation formula, the value of $l_0(x) =$ _____.

- a. $\frac{x_1 - x_0}{x - x_0}$.

b. $\frac{x - x_1}{x_0 - x_1}$.

c. $\frac{x - x_1}{x - x_0}$.

d. $\frac{x_1 - x_0}{x_2 - x_0}$.

Answer: B

66. In Lagrange's interpolation formula, the value of $l_1(x_1) =$ _____.

- a. 0.
- b. 1.
- c. 2.
- d. 3.

Answer: B

67. The Trapezoidal rule for $\int_{x_0}^{x_4} y dx =$ _____.

a. $\frac{h}{2} \{ y_0 + 2(y_1 + y_2 + y_3) + y_4 \}$.

b. $\frac{h}{3} \{ y_0 + 2(y_1 + y_2 + y_3) + y_4 \}$.

c. $\frac{h}{2} \{ y_0 + 2y_1 + 4(y_2 + y_3) + y_4 \}$.

d. $\frac{h}{2} \{ y_0 + y_1 + y_2 + y_3 + y_4 \}$.

Answer: A

68. Backward substitution method is applied in _____.

- a. Gauss-Jordan Method.
- b. Gauss-Seidal Method.
- c. Newton-Raphson Method.
- d. Gauss Elimination Method.

Answer: D

69. If a set of numerical values of the integral $f(x)$, a single valued function, is applied to

$$\int_a^b f(x) dx, \text{ then the process is known as } \underline{\hspace{2cm}}.$$

- a. a numerical integration.
- b. quadrate.
- c. interpolation.
- d. a numerical differentiation.

Answer: A

70. In deriving the trapezoidal formulae, the arc of the curve $y=f(x)$ over each sub-interval is replaced by its _____.

- a. straight line.
- b. ellipse.
- c. chord.
- d. tangent line.

Answer: C

71. Simpson's rule will give exact result, if the entire curve $y=f(x)$ is itself a _____.

- a. straight line.
- b. chord.
- c. parabola.
- d. tangent line.

Answer: C

72. Taylors series method will be very useful to give some initial starting values for powerful methods such as _____.

- a. Euler Method.
- b. Runge-Kutta Method.
- c. Newton-Raphson Method.
- d. Gauss Elimination Method.

Answer: B

73. Each of the mn numbers constituting an $m \times n$ matrix is called an _____ of the matrix.

- a. square.
- b. rectangle.
- c. diagonal.
- d. element.

Answer: D

74. The matrix obtained from any given matrix by interchanging its row and column is called the _____ of a matrix.

- a. square.
- b. rectangle.
- c. diagonal.
- d. transpose.

Answer: D

75. A matrix which is not necessarily a square matrix is called a _____ matrix.

- a. square.
- b. rectangular.
- c. diagonal.
- d. transpose.

Answer: B

76. In the product AB , the matrix A is called _____.

- a. product of the first matrix.
- b. product of the second matrix.
- c. prefactor.
- d. postfactor.

Answer: C

77. The _____ of a matrix is the largest order of a non-zero minor of the matrix.

- a. square.
- b. scalar.
- c. symmetric.
- d. rank.

Answer: D

78. If $A = \begin{pmatrix} 0 & 1 \\ 0 & 0 \end{pmatrix}$ and $B = \begin{pmatrix} 1 & 0 \\ 0 & 0 \end{pmatrix}$ then $AB =$ _____.

- a. $\begin{pmatrix} 0 & 1 \\ 0 & 0 \end{pmatrix}$
 b. $\begin{pmatrix} 1 & 0 \\ 0 & 0 \end{pmatrix}$
 c. $\begin{pmatrix} 1 & 1 \\ 0 & 0 \end{pmatrix}$
 d. $\begin{pmatrix} 0 & 0 \\ 0 & 0 \end{pmatrix}$

Answer: D

79. The adjoint of the matrix $A = \begin{pmatrix} a & b \\ c & d \end{pmatrix}$ is _____.

- a. $\begin{pmatrix} a & -b \\ c & d \end{pmatrix}$
 b. $\begin{pmatrix} a & -b \\ -c & d \end{pmatrix}$
 c. $\begin{pmatrix} d & b \\ c & d \end{pmatrix}$
 d. $\begin{pmatrix} d & -b \\ -c & a \end{pmatrix}$

Answer: D

80. If $A = \begin{pmatrix} 2 & -1 \\ 4 & 2 \end{pmatrix}$ then the determinant of A is _____.

- a. 4.
 b. 8.
 c. 0.
 d. -4.

Answer: C

81. The rank of $\begin{pmatrix} 7 & -1 \\ 2 & 1 \end{pmatrix}$ is _____.

- a. 1.
 b. 2.
 c. 9.
 d. 0.

Answer: B

82. In a rank matrix $\rho(A)$ is _____.

- a. (1) $\rho(A) = (m, n)$.
 b. (2) $\rho(A) = \min(m, n)$.
 c. (3) $\rho(A) \leq \min(m, n)$.
 d. (4) $\rho(A) \geq \min(m, n)$.

Answer: C

83. Every homogeneous system of linear equation is always consistent and this solution is called _____.

- a. unique solution.
 b. no solution.
 c. trivial solution.
 d. non-trivial solution.

Answer: C

84. The number of elements in a square matrix of order n is _____.

- a. n.

- b. $n+2$.
- c. $n-2$.
- d. n^2 .

Answer: D

85. Every square matrix A of order n with entries as real or complex numbers then the number is called_____ of matrix A.

- a. rank.
- b. adjoint.
- c. inverse.
- d. determinant.

Answer: D

86. If A is of order $m \times n$ then A^T is of order_____.

- a. $m \times n$.
- b. m/n .
- c. n/m .
- d. $n \times m$.

Answer: D

87. If A is any square matrix of order n then $|kA| =$ _____.

- a. $k|A|$.
- b. $|k^n A|$.
- c. $|kA^n|$.
- d. $k^n |A|$.

Answer: D

88. If the determinant of $\begin{pmatrix} 0 & 1 & 0 \\ x & 2 & x \\ 1 & 3 & x \end{pmatrix} = 0$ then $x =$ _____.

- a. -2.
- b. 1.
- c. -1.
- d. 2.

Answer: B

89. The sum of the diagonal elements of a square matrix is called_____.

- a. scalar matrix.
- b. trace.
- c. unit matrix.
- d. diagonal matrix.

Answer: B

90. Zero is a characteristic root of a matrix if and only if the matrix is _____.

- a. eigen-vector.
- b. eigen-value.
- c. rank of matrix.
- d. singular matrix.

Answer: D

91. The product of all Eigen values of A is =_____.

- a. adjoint of A.
- b. eigen-vector of A.
- c. co-factor of A.

d. determinant of A.

Answer: D

92. The Eigen value of the matrix $\begin{pmatrix} 1 & -2 \\ -5 & 4 \end{pmatrix}$ is _____.

a. (1,6).

b. (1,-6).

c. (-1,6).

d. (-1,-6).

Answer: C

93. The inverse of a square matrix can be computed by _____.

a. eigen-vector.

b. adjoint of a matrix.

c. eigen-values.

d. Cayley-Hamilton theorem.

Answer: D

94. The Eigen value of $\begin{pmatrix} 1 & 2 \\ 4 & 3 \end{pmatrix}$ is _____.

a. (1,5).

b. (1,-5).

c. (-1,5).

d. (-1,-5).

Answer: C

95. The latent roots of a _____ matrix are just the diagonal elements of the matrix.

a. scalar.

b. diagonal.

c. triangular.

d. singular.

Answer: C

96. The latent roots of a _____ matrix are of unit modulus.

a. unit.

b. inverse.

c. orthogonal.

d. adjoint.

Answer: C

97. _____ can be determined in two ways by inspection and by grouping methods.

a. range.

b. correlation.

c. mode.

d. regression.

Answer: C

98. Given observations are arranged in ascending or descending order of magnitude in _____.

a. arithmetic mean.

b. median.

c. geometric mean.

d. harmonic mean.

Answer: B

99. _____ is often computed when quick estimates of average are desired.

a. arithmetic mean.

- b. median.
- c. geometric mean.
- d. harmonic mean.

Answer: B

100. _____ is used in the construction of index numbers.

- a. arithmetic mean.
- b. median.
- c. geometric mean.
- d. harmonic mean.

Answer: C

101. The mean and mode values are 42.2 and 41.3 then the median value is _____.

- a. 42.
- b. 41.
- c. 41.9.
- d. 42.9.

Answer: C

102. For any two positive numbers, geometric mean=_____.

- a. $\sqrt{\text{Arithmetic mean} + \text{harmonic mean}}$.
- b. $\sqrt{\text{Arithmetic mean} - \text{harmonic mean}}$.
- c. $\sqrt{\text{Arithmetic mean} * \text{harmonic mean}}$.
- d. $\sqrt{\text{Arithmetic mean} / \text{harmonic mean}}$.

Answer: C

103. In a simple harmonic mean _____.

- a. $\frac{\sum f_i x_i}{N}$.
- b. $\text{anti log} \left(\frac{\sum f_i x_i}{\log x_i} \right)$.
- c. $\frac{N}{\sum \frac{f_i}{x_i}}$.
- d. $\sum \frac{f_i}{x_x} N$.

Answer: C

104. If $A = \begin{pmatrix} 1 & -2 & 3 \\ 0 & 4 & 5 \end{pmatrix}$ then $-3A =$ _____.

- a. $\begin{pmatrix} 3 & -6 & 9 \\ 0 & 12 & 15 \end{pmatrix}$
- b. $\begin{pmatrix} -3 & 6 & 9 \\ 0 & -12 & -15 \end{pmatrix}$

- c. $\begin{pmatrix} -3 & 6 & -9 \\ 0 & -12 & -1 \end{pmatrix}$
 d. $\begin{pmatrix} -3 & 6 & 9 \\ 0 & -12 & -15 \end{pmatrix}$

Answer: C

105. Transpose of A^T is _____.

- a. A^{3T} .
 b. A^{2T} .
 c. A.
 d. A^T .

Answer: C

106. Determinant (AB) = _____.

- a. $\det(A+B)$.
 b. $\det A + \det B$.
 c. $\det A \cdot \det B$.
 d. $\det (A/B)$.

Answer: C

107. $\begin{vmatrix} a-b & a \\ a & a+b \end{vmatrix} =$ _____.

- a. $a^2 - b^2$.
 b. $-b^2$.
 c. $(a+b)(a-b)$.
 d. $a^2 + b^2$.

Answer: B

108. $\begin{vmatrix} 2 & 1 & 3 \\ 4 & 6 & -1 \\ 5 & 1 & 0 \end{vmatrix} =$ _____.

- a. -79.
 b. -81.
 c. 79.
 d. 81.

Answer: B

109. Let $A = \begin{pmatrix} 1 & 2 \\ 3 & -4 \end{pmatrix}$ then $A^2 =$ _____.

- a. $\begin{pmatrix} 7 & -6 \\ 9 & 22 \end{pmatrix}$
 b. $\begin{pmatrix} 1 & 4 \\ 9 & 16 \end{pmatrix}$
 c. $\begin{pmatrix} 1 & 4 \\ 9 & 16 \end{pmatrix}$
 d. $\begin{pmatrix} 7 & 6 \\ 9 & 22 \end{pmatrix}$

Answer: A

110. Every polynomial equation of the nth degree has _____ roots.

- a. n.
 b. n+1.
 c. n-1.
 d. n+2.

Answer: A

111. A polynomial of the form $y=a+bx$ is called _____.

- a. straight line.
- b. second degree equation.
- c. polynomial equation.
- d. reciprocal equation.

Answer: A

112. Gauss Jacobi method is a _____.

- a. direct.
- b. indirect.
- c. self correcting.
- d. step by step.

Answer: B

113. Matrix A is of order 2×3 and B is of order 3×2 then AB is of order _____.

- a. 3×2 .
- b. 2×3 .
- c. 2×2 .
- d. 3×3 .

Answer: C

114. For studying phenomena like intelligence and density _____ is a better average to be used.

- a. mean.
- b. median.
- c. harmonic mean.
- d. geometric mean.

Answer: B

115. The _____ is useful when data are given in terms of rates.

- a. arithmetic mean.
- b. median.
- c. harmonic mean.
- d. geometric mean.

Answer: C

116. In discrete frequency distribution the total number of observations $N=$ _____.

- a. $\sum fx$.
- b. $\sum f$.
- c. $\sum \frac{1}{f}$.
- d. $\sum f \log x$.

Answer: B

117. When the relationship is of a quantitative nature the appropriate statistical tool for discovering and measuring the relationship and expressing the brief formula is known as_____.

- a. correlation.
- b. rank correlation.
- c. regression.
- d. both correlation and regression.

Answer: A

118. The _____ correlation was developed by spearmen.

- a. partial.

- b. multiple.
- c. rank.
- d. positive.

Answer: C

119. The ranks according to two attributes in a sample are 1,2,3,4,5 and 5,4,3,2,1. The rank correlation between them is _____.

- a. 0.
- b. -1.
- c. 1.
- d. 2.

Answer: B

120. While drawing a scatter diagram if all points appear to form a straight line going downward from left to right then it is inferred that there is _____.

- a. perfect positive correlation.
- b. simple positive correlation.
- c. perfect negative correlation.
- d. no correlation.

Answer: D

121. _____ correlation implies real relationship between the variables.

- a. Partial.
- b. Multiple.
- c. Rank.
- d. Spurious.

Answer: D

122. The degree and order of the differential equation of the family of all parabolas, whose axis is x-axis, are respectively _____.

- a. 2, 1.
- b. 1, 2.
- c. 3, 2.
- d. 2, 3.

Answer: B

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

- a. 10.
- b. 0.
- c. 1.
- d. -1.

Answer: C

124. Let $Y = aX + b$ be the straight line equation then the normal equations are _____ and _____.

- a. $\sum Y = a \sum X + nb$ and $\sum XY = a \sum X^2 + b \sum X$.
- b. $\sum Y = a \sum X - nb$ and $\sum XY = a \sum X^2 + b \sum X$.
- c. $\sum Y = a \sum X + nb$ and $\sum XY = a \sum X^2 - b \sum X$.
- d. $\sum Y = a \sum X + \sum XY$ and $\sum XY = a \sum X^2 + b \sum X$.

Answer: A

125. If $h=2$, find the value of y when $x=5$ by Newton Forward Interpolation Formula?

X: 4 6
Y: 1 3

- a. 2.

- b. 3.
- c. 0.
- d. 4.

Answer: A

126. In Runge-Kutta Method of second order the value of $\Delta y =$ _____.

- a. K_1 .
- b. K_2 .
- c. $K_1 + K_2$.
- d. $K_1 - K_2$.

Answer: B

127. Statistical information is expressed in _____.

- a. descriptive form.
- b. numerical form.
- c. both descriptive and numerical form.
- d. neither descriptive nor numerical form.

Answer: B

128. Which average is affected most by extreme observations _____.

- a. mean.
- b. median.
- c. mode.
- d. G.M.

Answer: A

129. If a frequency distribution is positively skewed, the mean of the distribution is _____.

- a. greater than the mode.
- b. less than the mode.
- c. equal to mode.
- d. less than the mean.

Answer: A

130. The trend can be found by the method of least squares _____.

- a. if the nature of trend is known.
- b. if the trend is not linear.
- c. if the trend is linear.
- d. if the nature of the trend is unknown.

Answer: C

131. The point of intersection of the two Ogives is _____.

- a. mean.
- b. median.
- c. mode.
- d. G.M.

Answer: B

132. A measure of _____ gives a single representative value for a set of usually unequal values.

- a. dispersion.
- b. central tendency.
- c. variation.
- d. relation.

Answer: B

133. In a symmetrical distribution mean, median and mode are _____.

- a. equal.
- b. unequal.
- c. zero.
- d. one.

Answer: A

134. All the points lie on a line in a scatter diagram when $r =$ _____.

- a. +1.
- b. -1.
- c. 1.
- d. 0.

Answer: C

135. The line obtained by the method of least squares is known as the line of _____.

- a. best fit.
- b. correlation.
- c. regression.
- d. none.

Answer: A

136. Rank correlation method was developed by _____.

- a. Karl Pearson.
- b. R.A. Fisher.
- c. Spearman.
- d. Croxten and cowden.

Answer: C

137. _____ is the geometric mean of two regression coefficient .

- a. mean.
- b. correlation.
- c. rank correlation.
- d. mode.

Answer: B

138. Regression coefficients are affected by change of _____.

- a. origin.
- b. scale.
- c. both origin and scale.
- d. neither origin nor scale.

Answer: B

139. Median usually lies between _____.

- a. mean and mode.
- b. mean and G.M.
- c. mean and H.M.
- d. G.M and H.M.

Answer: A

140. The word statistics is used as _____.

- a. a singular word.
- b. a plural word.
- c. both singular and plural words.
- d. neither singular nor plural word.

Answer: C

141. Statistics is _____.

- a. a quantitative science.

- b. a qualitative science.
- c. both quantitative and qualitative science.
- d. neither quantitative nor qualitative science.

Answer: A

142. Statistics considers _____.

- a. a single item.
- b. a set of items.
- c. either a single item or a set of items.
- d. neither a single item nor a set of items.

Answer: B

143. Statistics can _____.

- a. prove anything.
- b. disprove anything.
- c. neither prove nor disprove anything but it is just a tool.
- d. none of these.

Answer: C

144. Statistics can be considered as _____.

- a. an art.
- b. a science.
- c. both an art and a science.
- d. neither an art nor a science.

Answer: C

145. Calculate Arithmetic mean of the daily incomes of 10 families Rs. 10,90,85,103, 11,29,84,15,35,80.

- a. 54.2.
- b. 52.4.
- c. 50.2.
- d. 50.4.

Answer: A

146. The arithmetic mean of the values 45,48,50,52,55,58,60,01,63,65 is _____.

- a. 55.
- b. 55.7.
- c. 56.
- d. 56.7.

Answer: B

147. The arithmetic mean of the values 4,8,10,5,2,6 is _____.

- a. 5.
- b. 6.3.
- c. 5.8.
- d. 7.

Answer: C

148. Find the median for the values 4,45,60,20,83,19,26,11,27,12,52.

- a. 26.
- b. 19.
- c. 83.
- d. 20.

Answer: A

149. Calculate median 35,23,45,50,80,61,92,40,52,61.

- a. 50.

- b. 51.
- c. 61.
- d. 60.

Answer: B

150. Find mode 23,35,28,42,62,53,35,28,42,35,23,42,35.

- a. 23.
- b. 28.
- c. 42.
- d. 35.

Answer: D

151. Find mode from the values 40,25,60,35,81,75,90,10.

- a. 46.
- b. 47.
- c. 45.
- d. 40.

Answer: A

152. Calculate median from the values 48, 86,29,32,5,10,18.

- a. 29.
- b. 32.
- c. 10.
- d. 18.

Answer: A

153. Find median 86,93,42,25,85,29.

- a. 63.
- b. 64.
- c. 63.5.
- d. 64.5.

Answer: C

154. Find mode 23, 26, 34, 37, 38,23, 21.

- a. 26.
- b. 21.
- c. 34.
- d. 23.

Answer: D

155. Mode = _____.

- a. 3 median- 2 mean.
- b. 2 median- 3 mean.
- c. 3 median+ 2 mean.
- d. 2 median+ 3 mean.

Answer: A

156. Find mode 2, 4, 1, 5, 6, 5, 7, 5, 8.

- a. 1.
- b. 2.
- c. 3.
- d. 5.

Answer: D

157. Find mode 45, 67, 87, 76, 45, 23.

- a. 45.
- b. 45.5.

- c. 43.
- d. 23.

Answer: A

158. The best mean to find the average percentage of increase is _____.

- a. arithmetic mean.
- b. geometric mean.
- c. harmonic mean.
- d. weighted mean.

Answer: B

159. Leptokurtic means the distribution of frequencies is _____.

- a. more peaked.
- b. normal.
- c. flat.
- d. scattered.

Answer: A

160. Correlation analysis deals with _____.

- a. two attributes.
- b. two variables alone.
- c. variables.
- d. averages.

Answer: C

161. To calculate the average speed of vehicles, the most suitable method is _____.

- a. arithmetic mean.
- b. geometric mean.
- c. harmonic mean.
- d. median.

Answer: B

162. Standard deviation is used to know the _____.

- a. quantity of data.
- b. consistency of data.
- c. classification of data.
- d. statistics.

Answer: B

163. Correlation between the number of children born and the train accident is _____.

- a. positive correction.
- b. spurious correlation.
- c. negative correlation.
- d. rank correlation.

Answer: B

164. To find the percentage of increase or decrease in rates, the suitable average is _____.

- a. harmonic mean.
- b. geometric mean.
- c. mode.
- d. median.

Answer: B

165. Standard deviation will reveal the quality of _____.

- a. arithmetic mean.
- b. average.

- c. median.
- d. range.

Answer: D

166. Find the average of all the numbers between 6 and 34 which are divisible by 5.

- a. 18.
- b. 20
- c. 24.
- d. 30.

Answer: B

167. The average of first five multiples of 3 is _____.

- a. 3.
- b. 9.
- c. 12.
- d. 15.

Answer: B

168. A student was asked to find the arithmetic mean of the numbers 3,11,7,9,15,13,8,19,17,21,14 and x. he found the mean to be 12.what should be the number in place of x.

- a. 3.
- b. 7.
- c. 17.
- d. 31.

Answer: B

169. The average of first 50 natural numbers is _____.

- a.12.25
- b. 21.25
- c. 25
- d. 25.5

Answer: D

170. The mean of $1^2, 2^2, 3^2, 4^2, 5^2, 6^2, 7^2$ is _____.

- a.10.
- b. 20.
- c. 30.
- d. 40.

Answer: B

171. The average of all odd numbers upto 100 is _____.

- a. 49.
- b. 49.5.
- c. 50.
- d. 51.

Answer: C

172. If a, b, c, d, e are five consecutive numbers, their average is _____.

- a. $5(a+4)$.
- b. $abcde/5$.
- c. $5(a+b+c+d+e)$.
- d. $(a+b+c+d+e)/5$.

Answer: D

173. The sum of deviation of the actual values of Y and the computed values of Y is _____.

- a. maximum.
- b. minimum.
- c. 0.
- d. 1.

Answer: C

174. In the function $y = f(x)$, the independent variable x is called _____.

- a. entry.
- b. argument.
- c. intermediate.
- d. interpolation.

Answer: B

175. In the function $y = f(x)$, the dependent variable y is called _____.

- a. entry.
- b. argument.
- c. intermediate.
- d. interpolation.

Answer: A

176. Iteration method is a _____ method.

- a. direct.
- b. indirect.
- c. self correcting.
- d. step by step.

Answer: C

177. If any two rows or columns are interchanged in a matrix the value of the new determinant is _____.

- a. zero.
- b. one.
- c. of equal magnitude & same sign.
- d. of equal magnitude & different sign.

Answer: D

178. If any two rows or columns are identical in a matrix the value of the new determinant is _____.

- a. zero.
- b. one.
- c. same.
- d. different.

Answer: A

179. The determinant value of a matrix and its transpose is _____.

- a. of unequal magnitude & same sign.
- b. of unequal magnitude & different sign.
- c. of equal magnitude & same sign.
- d. of equal magnitude & different sign.

Answer: C

180. If $\begin{vmatrix} 2 & 2 & 3 \\ 1 & 2 & 4 \\ 3 & 1 & 2 \end{vmatrix} = 5$ then $\begin{vmatrix} 4 & 2 & 3 \\ 2 & 2 & 4 \\ 6 & 1 & 2 \end{vmatrix} =$ _____.

- a. 5.
- b. 10.

- c. -5.
- d. -10.

181. Fourth degree equations are also called _____ equations.

- a. quadratic.
- b. bi-quadratic.
- c. cubic.
- d. root of.

ANSWER: B

182. Let the arithmetic mean of two numbers be 9 and the geometric mean be 4, then these numbers are the roots of the quadratic equation_____.

- a. $x^2 + 18x + 16 = 0$.
- b. $x^2 - 18x - 16 = 0$.
- c. $x^2 + 18x - 16 = 0$.
- d. $x^2 - 18x + 16 = 0$.

Answer: D

183. A smooth curve that can be drawn to pass through near the plotted points, is called _____.

- a. curve fit.
- b. approximating curve.
- c. empirical curve.
- d. linear curve.

Answer: B

184. The equation of approximate curve taken as an approximate relation between x and y is called _____.

- a. curve fit.
- b. approximating curve.
- c. empirical relation.
- d. linear form.

Answer: C

185. The general problem of finding equations of approximating curves which fit a given data is called _____.

- a. curve fitting
- b. approximating curve
- c. empirical relation
- d. linear form.

Answer: A

186. The best representative curve to the given set of points for which the sum of the squares of the residuals is a minimum is known as_____.

- a. curve fitting.
- b. empirical relation.
- c. linear form.
- d. principles of least squares.

Answer: D

187. There is at most one polynomial of degree $\leq n$ _____.

- a. which interpolates $f(x)$ at $(n+1)$ distinct points x_0, x_1, \dots, x_n .
- b. which interpolates $f(x)$ at $(n-1)$ distinct points x_0, x_1, \dots, x_n .
- c. which interpolates $f(x)$ at n distinct points x_0, x_1, \dots, x_n .
- d. which interpolates $f(x)$ at $(n-1)$ distinct points x_0, x_1, \dots, x_{n-2} .

Answer: A

188. A differential equation is said to be linear if_____.

- a. the dependent variable and its differential co-efficient occur in the second degree.
- b. the dependent variable occurs in the first degree.
- c. the dependent variable and its differential co-efficient occur only in the first degree.
- d. the independent variable occurs in the first degree.

Answer: C

189. The process of numerical integration of a function of a single variable is called_____.

- a. Trapezoidal rule.
- b. Simpson's rule.
- c. cubature.
- d. quadrature.

Answer: D

190. The process of numerical integration of a function of a two variable is called _____.

- a. Trapezoidal rule.
- b. Simpson's rule.
- c. cubature.
- d. quadrature.

Answer: C

191. If A is any square matrix of order n then $|kA| =$ _____.

- a. $k|A|$.
- b. $|k^n A|$.
- c. $|kA^n|$.
- d. $k^n|A|$.

Answer : D

192. If the determinant of $\begin{pmatrix} 0 & 1 & 0 \\ x & 2 & x \\ 1 & 3 & x \end{pmatrix} = 0$ then x = _____.

- a. 0.
- b. 1.
- c. -1
- d. 2.

Answer : D

193. The ranks are according to two attributes in a samples are 1,2,3,4,5 and 5,4,3,2,1.

The rank correlation between them is _____.

- a. 0.
- b. -1.
- c. 1.
- d. 2.

194. The average relationship between two variable is_____.

- a. correlation.
- b. rank correlation.
- c. regression.
- d. both correlation and regression.

Answer: C

195. The relationship between 3 or more variables is studied with the help of _____ correlation.

- a. simple.

- b. multiple.
- c. rank.
- d. partial.

Answer: B

196. Determinant (AB) = _____.

- a. $\det(A+B)$.
- b. $\det A + \det B$.
- c. $\det A \cdot \det B$.
- d. $\det (A/B)$.

Answer: C

197. $\begin{vmatrix} a-b & a \\ a & a+b \end{vmatrix} = \text{_____}$.

- a. $a^2 - b^2$.
- b. $-b^2$.
- c. $(a+b)(a-b)$.
- d. $a^2 + b^2$.

Answer: B

198. $\begin{vmatrix} 2 & 2 & 3 \\ 1 & 1 & 4 \\ 3 & 3 & 2 \end{vmatrix} = \text{_____}$.

- a. 5.
- b. 0.
- c. -5.
- d. -10.

Answer: B

199. If the relationship between two variables out of three variables is studied, the correlation is said to be _____.

- a. simple.
- b. multiple.
- c. rank.
- d. partial.

Answer: D

200. $(AB)^{-1} = \text{_____}$.

- a. $A^{-1}B^{-1}$.
- b. $B^{-1}A^{-1}$.
- c. $A^{-1} + B^{-1}$.
- d. A^{-1} / B^{-1} .

Answer: B

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