

STATISTICAL SCIENCE

- AI
- The term gene is coined by:
(A) Mendel (B) Bateson
(C) Shull (D) Johannsen
 - Oryza sativa is a diploid species having following number of chromosomes:
(A) 18 (B) 24
(C) 28 (D) 42
 - Antenna is absent in:
(A) Odonata (B) Protura
(C) Thysanura (D) Coleoptea
 - Profit mark up price is calculated as:
(A) MR-P (B) AR-P
(C) AC-P (D) MC-P .
 - The number of observations falling into each class is called:
(A) Class interval (B) Class frequency
(C) Class width (D) Class mark
 - Which of the following is a discrete variable?
(A) Height of plant (B) Length of leaves
(C) Number of spikes (D) Age of animals
 - Cumulative frequency is a must for the calculation of:
(A) Mean (B) Median
(C) Mode (D) Geometric mean
 - The property of change of origin and scale is satisfied only by:
(A) Mean (B) Median
(C) Mode (D) Deciles
 - If the value of a set of observations is measured in cms., the unit of variance will be:
(A) No unit (B) cms²
(C) cms (D) cms³



10. Pick the odd one:
(A) Keyboard (B) Mouse
(C) Scanner (D) Printer
11. An error in computer program is:
(A) Virus (B) Worm
(C) Bug (D) Power off
12. CSS stands for:
(A) Collecting Style Sheet (B) Cascading Style Sheet
(C) Compare Style Sheet (D) Comprehensive Style Sheet
13. Binary equivalent of 125(10) is:
(A) 1010101 (B) 1111101
(C) 1110110 (D) 1100110
14. Cause and effect relationship can be revealed by:
(A) Mean (B) Correlation
(C) Variance (D) Regression
15. If $P(A \cup B) = P(A) + P(B)$ then the events are said to be:
(A) Equally likely (B) Independent
(C) Dependent (D) Mutually exclusive
16. The characteristics of the population is called:
(A) Parameter (B) Sample
(C) Universe (D) Statistic
17. The standard deviation of sampling distribution of mean is called:
(A) Sampling variance of mean (B) Standard deviation of mean
(C) Standard error of mean (D) None of these
18. First KVK were established in 1974 at:
(A) Nagpur (B) Nilokheri
(C) Ludhiana (D) Pondicherry
19. The center of the circle $4x^2 + 4y^2 - 8x + 12y - 25 = 0$ is?
(A) (2, -3) (B) (-2, 3)
(C) (-4, 6) (D) (4, -6)
20. An operating system has ability to run more than one application at a time. This is called:
(A) Multitasking (B) Multi-user
(C) Time-Sharing (D) Object Oriented Program

Code-07



AL

21. ARPANET:
(A) American Resource Parallel Network
(B) Advanced Resource Planning Network
(C) Advanced Research Projects Agency Network
(D) Advanced Research Planning Agency Network
22. The shortcut key to insert a slide in power point is:
(A) Ctrl+N (B) Ctrl+S
(C) Ctrl+M (D) Ctrl+D
23. The process of starting of a computer is known as:
(A) Tracking (B) Loading
(C) Booting (D) Linking
24. Which protocol is used by e-mail clients to download e-mails to your computer:
(A) FTP (B) TCP
(C) SMTP (D) POP
25. If A and B are two events, the probability of occurrence of either A or B is given as:
(A) $P(A) + P(B)$ (B) $P(A \cup B)$
(C) $P(A \cap B)$ (D) $P(A) \cdot P(B)$
26. If A and B are two independent events, then $P(A \cap B) =$:
(A) $P(A) \cdot P(B)$ (B) $P(A) + P(B)$
(C) $P(A) - P(B)$ (D) Zero
27. If the entries in row of a Latin square are same as its column, the Latin square is called:
(A) Conjugate. (B) Self Conjugate
(C) Orthogonal (D) Symmetric
28. Tyloses are associated with:
(A) Wilt (B) Leaf spot
(C) Root rot (D) White rust
29. Pink Bollworm is a serious pest of:
(A) Mustard (B) Cotton
(C) Gram (D) Ladies finger
30. The symmetric difference of A {1,2,3,4} and B = {3,4,5,6} is:
(A) {3,4} (B) {1,2}
(C) {5,6} (D) {1,2,5,6}

31. Who is the father of white revolution:
 (A) M.S. Swaminathan (B) C. Subramanyan
 (C) V. Kurien (D) H.G. Khorana
32. Removal of field heat from the cut flowers is termed as:
 (A) Refrigeration (B) Pre-cooling
 (C) Cold storage (D) Conditioning
33. Inflorescence of sugarcane is known as:
 (A) Arrow (B) Panicle
 (C) Capitulum (D) Racemose
34. An Amino acid which is related to drought tolerance in plants is:
 (A) Glutamic acid (B) Proline
 (C) Glycine (D) Hydroxy proline
35. The average age of 50 students in a class is 20 years. When the age of a teacher is included, the average age is increased by one year. The age of the teacher is:
 (A) 51 years (B) 55 years
 (C) 71 years (D) 30 years
36. The relationship between AM, GM and HM is:
 (A) $AM \geq GM \geq HM$ (B) $AM \leq GM \leq HM$
 (C) $AM = GM = HM$ (D) $GM \geq AM \geq HM$
37. The mean and standard deviation of a set of observations are 20 and 5 respectively. If a constant value 5 is added to each of the observation, the coefficient of variation of the new set of observations is equal to:
 (A) 250% (B) 20%
 (C) 25% (D) 200%
38. Given that $P(A) = \frac{1}{3}$, $P(B) = \frac{1}{4}$, $P(A/B) = \frac{1}{6}$. Then probability of $P(B/A)$ is equal to:
 (A) $\frac{1}{4}$ (B) $\frac{3}{4}$
 (C) $\frac{1}{8}$ (D) $\frac{1}{2}$
39. Two random variables are said to be independent if:
 (A) $E(XY) = E(X)E(Y)$ (B) $E(XY) = 1$
 (C) $E(XY) = 0$ (D) $E(XY) = E(X) + E(Y)$

AL

40. The COV (XY) of the random variable x and y can be written in terms of expectation as:
(A) $\text{COV}(X, Y) = E(XY) - E(X)E(Y)$ (B) $\text{COV}(X, Y) = E(X)E(Y) - E(XY)$
(C) $\text{COV}(X, Y) = E(XY)$ (D) $\text{COV}(XY) = E(X)E(Y)$
41. Let X be a normal variate. Then point of inflexion of the variable x is equal to:
(A) $x = \mu \pm \sigma$ (B) $x = \sigma \pm \mu$
(C) $x = \pm \sigma$ (D) $x = \pm \mu$
42. The distribution that consists of only rare events is known as:
(A) Poisson distribution (B) Binomial distribution
(C) Negative binomial distribution (D) Normal distribution
43. Poisson distribution is a limiting case of binomial distribution if:
(A) $n \rightarrow \infty, p \rightarrow 0$ (B) $n \rightarrow \infty, p \rightarrow \infty$
(C) $n \rightarrow 0, p \rightarrow \infty$ (D) $n \rightarrow 0, p \rightarrow 0$
44. Response variable is also known as:
(A) Independent variable (B) Dependent variable
(C) Autoregressive variable (D) Auto correlated variable
45. The term regression was given by:
(A) Prof. Karl Pearson (B) Prof. R. A. Fisher
(C) Sir Francis Galton (D) Prof. Gauss
46. Correlation coefficient is independent of:
(A) Change of origin (B) Change of origin but not of scale
(C) Change of scale but not origin (D) Change of scale
47. If correlation coefficient between two variables X and Y is zero, it means:
(A) X and Y are linearly related (B) X and Y are independent
(C) X and Y are not linearly related (D) X and Y are dependent
48. If $V(X-Y) = V(X+Y)$ for two variables X and Y, then the value of correlation coefficient r_{xy} is equal to:
(A) 1 (B) 0
(C) -1 (D) 2
49. The value of $\frac{1^2 + 2^2 + 3^2 + \dots + n^2}{n}$ is equal to:
(A) $\frac{n-1}{12}$ (B) $\frac{n(n^2+1)}{12}$
(C) $\frac{n(n+1)(2n+1)}{6}$ (D) $\frac{n(2n+1)}{12}$



50. The difference between sample estimate and its corresponding population parameter is called:
 (A) Sampling error (B) Non-sampling error
 (C) Human error (D) Formula error
51. Power of a test is related to:
 (A) Type-I error (B) Type-II error
 (C) Both Type-I & Type-II error (D) None of these
52. Contingency table may be:
 (A) One dimensional (B) Two dimensional
 (C) Three dimensional (D) Multi-dimensional
53. The sum of squares of independent normal variates is known as:
 (A) Standard normal variate (B) Chi-square variate
 (C) Poisson variate (D) Binomial variate
54. The significant value of Z at 5% and 1% are:
 (A) 1.96 and 2.58 (B) 2.96 and 2.58
 (C) 1.96 and 3.85 (D) 2.96 and 3.58
55. For large samples, t-distribution tends to:
 (A) Binomial distribution (B) Poisson distribution
 (C) Normal distribution (D) Hyper geometric distribution
56. Which test is used in the analysis of variance:
 (A) F- test (B) Z-test
 (C) t-test (D) Chi- square test
57. In a one way classification, if there are k classes having 'n' observations in all, then df for error is equal to:
 (A) k-1 (B) n-1
 (C) n-k-1 (D) n-k
58. In field experiments, experimental error is because of:
 (A) Experimenter's errors (B) Extraneous factors
 (C) Treatment differences (D) Replication differences
59. In a split plot experiment, smaller error mean squares is obtained for:
 (A) Main plot error (B) Sub plot error
 (C) Experimental error (D) Treatment error

AL

60. If different effects are confounded in different blocks, it is said to be:
(A) Partial confounding (B) Complete confounding
(C) Balanced confounding (D) Imbalanced confounding
61. If an RCBD consisting of five treatments and six replications is added with two more treatments, the increase in error degrees of freedom will be:
(A) 10 (B) 12
(C) 16 (D) 18
62. For testing the equality of more than two treatments, the test is:
(A) Chi – square test (B) F - test
(C) t - test (D) Z - test
63. The critical difference (CD) is a form of a t-test and its formula is:
(A) $CD = t \times SE(d)$ (B) $CD = t + SE(d)$
(C) $CD = t / SE(d)$ (D) $CD = F \times SE(d)$
64. With more than two observations missing in RCBD, the estimation technique used is known as:
(A) Bartlett's missing plot technique
(B) Fishers missing plot technique
(C) Kempthorne's missing plot technique
(D) Cochran and Cox's missing plot technique
65. Which of the following functions is positive for all X:
(A) $\cos(\sin x)$ (B) $\cos(\tan x)$
(C) $\tan(\cos x)$ (D) $\log \tan(x)$
66. The straight lines $x + y = 0$, $3x + y - 4 = 0$, $x + 3y - 4 = 0$ form a triangle which is:
(A) Isosceles (B) Equilateral
(C) Right angled (D) None of these
67. If $\sin A$ is greater than 0 and $\cos A$ is smaller than 0, then A may lie in:
(A) 1st quadrant (B) 2nd quadrant
(C) 3rd quadrant (D) 4th quadrant
68. $\tan 3x - \tan 2x - \tan x$ is equal to:
(A) $\tan x \tan 2x \tan 3x$
(B) $-\tan x \tan 2x \tan 3x$
(C) $\tan x \tan 2x \tan x \tan 3x - \tan 2x \tan 3x$
(D) $\tan 5x$



69. If A is a set and U is the Universal set, then:
 (A) $A \cup A = U$ (B) $A \cup U = U$
 (C) $A \cap U = U$ (D) $A \cap B = U$
70. The significance of multiple correlation coefficient is tested by:
 (A) t - test (B) F - test
 (C) Z - test (D) Paired t - test
71. "The ANOVA is a tool by which total variation may be split up into several physically assignable components" was defined by:
 (A) Karl Pearson (B) R. A. Fisher
 (C) Horace Secrist (D) A. L. Bowley
72. During experimentation, we lose some information and we want to get idea about these values. Which of the following techniques will be useful?
 (A) Field plot technique (B) Missing plot technique
 (C) Seed plot technique (D) Uniformity trial
73. What type of correlation can be used when both the variables are not normally distributed:
 (A) Partial correlation (B) Multiple correlation
 (C) Rank correlation (D) Simple correlation
74. If $\sin \theta + \cos \theta = m$ and $\sec \theta = n$, then $n(m^2 - 1) =$:
 (A) $\sqrt{2mn}$ (B) $\frac{mn}{2}$
 (C) $2m$ (D) $5m$
75. If $x + y = 8$ and $xy = 7$ then the value of $X^3 - Y^3$ is:
 (A) 342 (B) 345
 (C) 344 (D) 350
76. If $\tan A + \sin A = p$ and $\tan A - \sin A = q$, then the correct statement out of the following is:
 (A) $p^2 + q^2 = 4\sqrt{pq}$ (B) $p^2 - q^2 = 4\sqrt{pq}$
 (C) $p^2 - q^2 = 2\sqrt{pq}$ (D) $p^2 - q^2 = \sqrt{pq}$
77. The precision of an experiment with r replications can be worked out by using the expression written as:
 (A) $\frac{r}{\sigma^2}$ (B) $\frac{\sqrt{r}}{\sigma}$
 (C) $\frac{2r}{\sigma^2}$ (D) $\frac{\sqrt{2r}}{\sigma}$



AL

78. The result drawn from ANOVA based on transformed data is:
(A) Same as based on original data
(B) Different from original data
(C) More efficient than based on original data
(D) Less efficient than based on original data
79. Two basic principles followed in CRD are:
(A) Randomization and Local Control (B) Randomization and Replication
(C) Replication and Local Control (D) Randomization and Regularity
80. 3^3 experiment with r replication, the error df will be equal to:
(A) $6(r - 1)$ (B) $7(r - 1)$
(C) $(8r - 1)$ (D) $(7r - 1)$
81. In split plot experiment, the sub factor B is allotted to the split plot:
(A) Within blocks (B) Between blocks
(C) Between rows (D) Between columns
82. Stevenson screen is related to:
(A) Bacteriology (B) Biotechnology
(C) Agrometeorology (D) Remote Sensing
83. Seed work board is required for:
(A) Viability test of seed (B) Germination test of seed
(C) Purity test of seed (D) Blending of seed
84. Indicator plant of copper is:
(A) Maize (B) Wheat
(C) Sorghum (D) Potato
85. D-leaf is a best indicator of nutrient status of:
(A) Pineapple (B) Apple
(C) Banana (D) Ber
86. Which fruit has the highest chromosome ($2n = 308$)?
(A) Banana (B) Guava
(C) Mulberry (D) Cashew nut
87. Cricket ball is an improved variety of:
(A) Sapota (B) Mango
(C) Litchi (D) Guava

88. Who established most famous LALBAGH garden in Bangalore?
 (A) King Haider Ali (B) Tipu Sultan
 (C) Ranjit Singh (D) King Surjamal
89. Triticale is:
 (A) Interspecific cross (B) Intraspecific cross
 (C) Intergeneric cross (D) Intrageneric cross
90. Increase in the price of a commodity leads to:
 (A) Movement on same curve from right to left
 (B) Movement on same curve from left to right
 (C) Upward shift of demand curve
 (D) Downward shift of demand curve
91. If z_1, z_2 and z_3 are complex numbers such that $|z_1|=|z_2|=|z_3|=|1/z_1 + 1/z_2 + 1/z_3|=1$, then $|z_1+z_2+z_3|$ is:
 (A) Equal to 1 (B) Less than 1
 (C) Greater than 3 (D) Equal to 3
92. If $A = \begin{bmatrix} \alpha & 0 \\ 1 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 0 \\ 5 & 1 \end{bmatrix}$, then value of α for which $A^2 = B$, is:
 (A) 1 (B) -1
 (C) 4 (D) No real values
93. If $A = \begin{bmatrix} \alpha & 2 \\ 2 & \alpha \end{bmatrix}$ and $|A^3| = 125$, then the value of α is:
 (A) ± 1 (B) ± 2
 (C) ± 3 (D) ± 5
94. $\int (\cos 2x - 1)/(\cos 2x + 1) dx =$:
 (A) $\tan x - x$ (B) $x + \tan x$
 (C) $x - \tan x$ (D) $-x - \cot x$
95. The approximate value of $(10)^{1/3}$ by Newton's formula corrected to four places of decimal is:
 (A) 2.1547 (B) 2.1545
 (C) 2.1544 (D) 2.1549
96. In Simpson's one third rule, the integrand of $\int_a^b f(x) dx$ assumes the shape of a curve given by:
 (A) Parabola (B) Hyperbola
 (C) Circle (D) Ellipse



AL

97. If $\begin{vmatrix} 3x-8 & 3 & 3 \\ 3 & 3x-8 & 3 \\ 3 & 3 & 3x-8 \end{vmatrix} = 0$, then $x =$:
- (A) $8/3$ (B) $2/3$
(C) $1/3$ (D) $4/3$
98. From the matrix equation $AB=AC$, we can conclude $B=C$, provided the matrix A is:
- (A) Singular (B) Non-singular
(C) Symmetric (D) Asymmetric
99. If $A = \begin{bmatrix} 3 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ then A is:
- (A) Diagonal matrix (B) Scalar matrix
(C) Nilpotent matrix (D) Idempotent matrix
100. If A is 3×4 matrix and B is a matrix such that AB' and BA' are both defined. Then B is the type:
- (A) 3×4 (B) 3×3
(C) 4×4 (D) 4×3
101. Let A and B be two disjoint subsets of a universal set U , then $(A \cup B) \cap B' =$:
- (A) A (B) B
(C) \emptyset (D) A'
102. A set contains n elements. The power set contains:
- (A) n elements (B) 2^n elements
(C) n^2 elements (D) $(n+1)$ elements
103. Let $A = \{1, 2, 3, 4, 5\}$, $B = \{2, 3, 6, 7\}$. Then the number of elements in $(A \times B) \cap (B \times A)$ is:
- (A) 18 (B) 6
(C) 4 (D) 0
104. A and B are two sets having 3 and 5 elements, respectively and having 2 elements in common. Then, the number of elements in $A \times B$ is:
- (A) 6 (B) 36
(C) 15 (D) 20
105. Which of the following is not available on the ruler of MS Word screen?
- (A) Tap Stop Box (B) Left Indent
(C) Right Indent (D) Centre Indent

106. In a computer system, the result of data processing can be reported through:
(A) Control Unit (B) Output device
(C) Secondary memory (D) Arithmetic Unit
107. Which of the following is basic data type?
(A) Array (B) Character
(C) Structure (D) Union
108. A programming methodology used with internet is:
(A) C++ programming (B) HTML programming
(C) GUI programming (D) COBOL programming
109. MODEM stands for:
(A) Mode emulator (B) Modulator-demodulator
(C) Maximum emulator (D) None of these
110. Web browser is a:
(A) Software tool that computer uses for communication with server on Internet
(B) Hardware tool used to browse the internet
(C) Software tool used to configure a web server
(D) Website used by intelligence agencies
111. ISDN stands for:
(A) Integrated society discreet network
(B) Integrated Services Digital Network
(C) Integrated Society Digital Network
(D) Internal Social Digital Network
112. In the URL <http://www.stxavie.com/index.html>, the domain name is:
(A) http (B) www
(C) stxavie (D) index
113. Cookie are:
(A) Messages that a web server transmits to a web browser
(B) A bakery product
(C) A message the client transmits to server
(D) Mechanism for storing an information on the net
114. Probability can take values from:
(A) $-\infty$ to ∞ (B) $-\infty$ to 1
(C) -1 to 1 (D) 0 to 1



AL

115. Two events are said to be independent if:
(A) Each outcome has equal chance of occurrence
(B) There is nothing common in between them
(C) One does not affect the occurrence of the other
(D) Both the events have only one point
116. The definition of a priori probability was originally developed by:
(A) De Moivre (B) Laplace
(C) Von-Mises (D) Feller
117. If A is an event. The conditional probability of A given, A is equal to:
(A) Zero (B) One
(C) Infinite (D) Indeterminate quantity
118. Level of significance is the probability of:
(A) Type I error (B) Type II error
(C) Not committing error (D) Any of these
119. Size of critical region is known as:
(A) Power of the test (B) Size of type II error
(C) Critical value of the test statistics (D) Size of the test
120. Degrees of freedom is related to:
(A) No. of observations in a set
(B) Hypothesis under test
(C) No. of independent observations in a set
(D) None of these
121. Student's t-test was invented by:
(A) R A Fisher (B) G W Snedecor
(C) W S Gosset (D) W G Cochran
122. To test $H_0: \mu = \mu_0$ vs $H_1: \mu > \mu_0$, when the population S.D. is known, the appropriate test is:
(A) t-test (B) Z test
(C) Chi-square test (D) F test
123. The mean difference between 9 paired observations is 15.0 and the standard deviation of differences is 5.0. The value of statistic t is:
(A) 27 (B) 9
(C) 3 (D) Zero



124. Degrees of freedom for statistics χ^2 (Chi-square) in case of contingency table of order (2x2) is:
 (A) 3 (B) 4
 (C) 2 (D) 1
125. The value of coefficient of contingency lies between:
 (A) 0 and ∞ (B) 0 and 1
 (C) 0 and 100 (D) -1 and 1
126. If all frequencies of classes are same, the value of χ^2 (Chi-square) is:
 (A) 1 (B) ∞
 (C) Zero (D) $-\infty$
127. Range of variance ratio F is:
 (A) -1 to 1 (B) $-\infty$ to ∞
 (C) 0 to ∞ (D) 0 to 1
128. A completely randomized design is also known as:
 (A) Unsystematic design (B) Non-restrictional design
 (C) Single block design (D) Restrictional design
129. Missing observation in completely randomized design is to be:
 (A) Estimated (B) Deleted
 (C) Ignored (D) Added as per wish
130. Error sum of squares in RBD as compared to CRD using the same material is:
 (A) More (B) Less
 (C) Equal (D) Not comparable
131. A distribution has mean = 8.7, median = 8.5 and mode = 7.3. The distribution is:
 (A) Positively skewed (B) Negatively skewed
 (C) Symmetrical (D) None of these
132. The quartile deviation of the income of a certain person given in rupees for 12 months in a year: 129, 150, 151, 151, 157, 158, 160, 161, 162, 162, 173, 175 is:
 (A) 4.5 (B) 5.5
 (C) 6.2 (D) 6.5
133. If a variate takes values $a, ar, ar^2, \dots, ar^{n-1}$, which of the relations between means holds true:
 (A) $AH=G^2$ (B) $\frac{A+H}{2} = G$
 (C) $A>G>H$ (D) $A=G=H$



AL

134. The geometric mean of the series $1, 2, 4, 8, \dots, 2^n$ is:
 (A) $2^{n/2}$ (B) $2^{n/4}$
 (C) 2^{2n} (D) None of these
135. If a mean of a variate x is m , the mean of $\frac{ax+b}{c}$ where a, b, c are constant is:
 (A) $\left(\frac{am+b}{c}\right)$ (B) $\left(\frac{2b+a}{c}\right)m$
 (C) $\left(\frac{a+b}{mc}\right)$ (D) $\left(\frac{mc}{a+b}\right)$
136. The numbers $3, 5, 7, 4$ have frequencies $x, x+4, x-3, x+8$. If their arithmetic mean is 4 , the value of x is:
 (A) $\frac{5}{3}$ (B) $\frac{7}{4}$
 (C) $\frac{2}{3}$ (D) $\frac{8}{5}$
137. If \bar{x} denotes the mean of n values x_1, x_2, \dots, x_n , then mean of the values x_i+2 , where $i = 1, 2, 3, \dots, n$ is:
 (A) $\bar{x}+2$ (B) $\bar{x}+n$
 (C) $\bar{x}+2n$ (D) $\bar{x}+n+1$
138. For a symmetrical distribution P_{25} and P_{75} are 30 and 70 respectively. The value of median is:
 (A) 50 (B) 30
 (C) 40 (D) None of these
139. If in a series which is not highly skewed, the mean deviation is 7.8 , the approximate value of its standard deviation is:
 (A) 9.75 (B) 8.37
 (C) 10.2 (D) None of these
140. If s. d. of X is σ , for the variable $U = \frac{ax+b}{c}$ where a, b, c are constant, the s.d. of U is:
 (A) $\left|\frac{c}{a}\right|\sigma$ (B) $\left|\frac{a}{c}\right|\sigma$
 (C) $\left|\frac{b}{c}\right|\sigma$ (D) None of these
141. Two variables X and Y have zero means, the same variance σ^2 and zero correlation. Then $U=X \cos \alpha + Y \sin \alpha$, $V=X \sin \alpha - Y \cos \alpha$ have correlation:
 (A) -1 (B) 1
 (C) 0 (D) $1/2$



142. The correlation between X and $a-X$ is:
 (A) -1 (B) $-\frac{1}{2}$
 (C) $-\frac{1}{4}$ (D) 0
143. For two variables x and y with the same mean, the two regression equations are $y = ax + b$ and $x = \alpha y + \beta$. then the value of b/β is:
 (A) $\frac{1-a}{1-\alpha}$ (B) $\frac{1+a}{1+\alpha}$
 (C) $\frac{1-\alpha}{1-a}$ (D) $\frac{1+\alpha}{1+a}$
144. If X and Y are two independent variables with $\sigma^2x = 36$, $\sigma^2y = 16$, then correlation coefficient between $U = X + Y$ and $V = X - Y$ is:
 (A) $\frac{5}{13}$ (B) $-\frac{5}{13}$
 (C) $\frac{4}{9}$ (D) None of these
145. Which of the following is a sequence alignment tool:
 (A) BLAST (B) PRINT
 (C) PROSITE (D) PIR
146. Each record in a data base is called:
 (A) Entry (B) File
 (C) Record (D) Ticket
147. Gen Bank, the nucleic acid sequence database is maintained by:
 (A) Brookhaven Laboratory (B) DNA database of Japan (DDBJ)
 (C) EMBL (D) NCBI
148. What is gutter margin?
 (A) Margin that is added to right margin when printing
 (B) Margin that is added to the left margin when printing
 (C) Margin that is added to the outside of the page when printing
 (D) Margin that is added to the binding side of page when printing
149. Landscape means:
 (A) A font style (B) Paper size
 (C) Paper layout (D) Page orientation

150. Background color on a document is not visible in:
- | | |
|---------------------|-----------------------|
| (A) Web Layout view | (B) Print preview |
| (C) Reading view | (D) Print layout view |

Cross matching type questions (151 to 160). Each sub-question carries ONE mark. Choose the correct answer (A, B, C, D and E) for each sub-question (i, ii, iii, iv and v) and enter your choice in the circle (by shading with Black/Blue ball point pen) on the OMR- Answer Sheet. For each wrong answer 0.20 marks will be deducted.

151. (i) Algorithm (A) Loading OS from secondary memory to primary memory
(ii) Flowchart (B) Step by step solving problem
(iii) Program (C) Diagrammatic representation of algorithm
(iv) Decision making (D) Set of sequence of instruction
(v) Booting (E) Capability of computer system to take logical decision
152. (i) UNIX (A) Electronic spread sheet
(ii) Compiler (B) Operating system
(iii) Windows (C) GUI OS
(iv) Access (D) Converts the high level to low level language
(v) Excel (E) Database management system
153. (i) F - test (A) Test of independence of attributes
(ii) Z - test (B) Small sample test
(iii) Normal (C) Large sample test
(iv) Chi – square test (D) Test of two variances
(v) t - test (E) Height of plants
154. (i) Windows (A) Is a presentation tool
(ii) Power point (B) Is a intranetworking architecture
(iii) LAN (C) Is used to store intermediate data and instruction
(iv) Registers (D) Is a operating system
(v) BIOS (E) Basic Input Output System
155. (i) Binomial (A) (0,1)
(ii) Poisson (B) (μ, σ^2)
(iii) Normal (C) (np, npq)
(iv) Standard normal (D) (n, 2n)
(v) Chi-square (E) (m, m)

AL

156. (i) Geometric mean of two observations can be calculated only (A) When the data are in ratios or percentages
(ii) Geometric mean is better than other means when (B) Both the observations are positive
(iii) The unitless measure of dispersion (C) Mean
(iv) Mean deviation is minimum when deviations are taken from (D) Coefficient of variation
(v) Sum of squares of the deviation is minimum when deviation is taken from (E) Median
157. (i) The hypothesis under test is (A) Type II error
(ii) Power of a test is related to (B) χ^2 (chi-square)
(iii) An hypothesis about proportion of items in a class can usually be tested by (C) Null Hypothesis
(iv) The hypothesis that the population variance has a specified value can be tested by (D) F test
(v) Analysis of variance utilizes (E) Z test
158. (i) In the regression line $Y = \beta_0 + \beta_1 X$, β_0 is the (A) Signature property
(ii) The property that β_{yx} and β_{xy} and P have same signs is called (B) Magnitude property
(iii) The property $\beta_{yx} > 1$ implies that $\beta_{xy} < 1$ is known as (C) Intercept of the line
(iv) If the two line of regression are perpendicular to each other, the relation between the two regression coefficient is (D) $\beta_{yx} \cdot \beta_{xy} = 1$
(v) If the two lines of regression are coincident, the relation between the two regression coefficients is (E) $\beta_{yx} = -\beta_{xy}$



AL

159. (i) Matrix usually written as I with 1 (ones) on the main diagonal and zeroes elsewhere (A) Inverse matrix
- (ii) Matrix which when pre-multiplied against A, yields the identity matrix (B) Symmetric
- (iii) A matrix whose determinant is zero (C) Identity matrix
- (iv) Age-classified matrix used in life history analysis (D) Singular matrix
- (v) A matrix which equals to its own transpose (E) Leslie matrix
160. (i) Standard deviation of the values of a given function of the data (parameter) overall possible samples of the same size (A) Test statistic
- (ii) The different values which a given function of the data takes when it is computed for two or more samples drawn from the same population (B) Standard error
- (iii) A measure of how close an estimator is expected to be the true value of a parameter (C) Bias
- (iv) A term which refers to how far the average statistic lies from the parameter it is estimating (D) Precision
- (v) A statistic used to test hypothesis (E) Sampling variability