

Department of STATISTICS, RGU

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| | Which of the following is not true for inductive approach? | | | | | |
| 01 | a) begins with a set of empirical observations | b) seeks patterns in observations | c) theorizing about observation patterns | d) begins with a theory | d | begins with a theory |
| 02 | A scholar while writing his/her thesis/article uses ICT as various stages of research conducted. He/she justifies the conceptual error in interpreting attributing the same to the ICT devices. This will be labeled as _____. | | | | | |
| | a) technical incompetence | b) human error | c) moral and ethical lap | d) research design | a | technical incompetence |
| 03 | The information is _____ | | | | | |
| | a) raw data | b) process data | c) operational data | d) real time data | b | process data |
| 04 | Independent variables are manipulated to observe and measure its effect on the dependent variables in _____. | | | | | |
| | a) historical method | b) operational method | c) experimental method | d) exploratory method | c | experimental method |
| 05 | The scale of measurement which deals with classification, order, equality of units is: | | | | | |
| | a) ordinal | b) nominal | c) interval | d) ratio | c | interval |
| 06 | Research focuses on enhancing of knowledge in a given field is known as: | | | | | |
| | a) action research | b) fundamental research | c) historical research | d) evaluative research | b | fundamental research |
| 07 | Which of the following method is use in empirical researches? | | | | | |
| | a) case study method | b) survey method | c) scientific method | d) deductive method | c | scientific method |
| 08 | In case the population of research is heterogeneous in nature, which of the following sampling techniques will ensure optimum representativeness of sample units? | | | | | |

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| | a) stratified random sampling | b) random sampling | c) cluster sampling | d) systematic sampling | a | stratified random sampling |
| 09 | Plagiarism in research is: | | | | | |
| | a) creative use of previous data | b) copying unscrupulously and making use of it | c) quoting someone and citing him/her | d) referring to previous data and working over it with new objective | b | copying unscrupulously and making use of it |
| 10 | By specifying and organizing the category of information in research is known as: | | | | | |
| | a) research design | b) literature review | c) developing hypothesis | d) data analysis | b | literature review |
| 11 | Reference serve the purpose of: | | | | | |
| | a) lending authenticity to given content | b) insightful decision making | c) giving ornamental value to the research | d) exhibiting the great achievement | a | lending authenticity to given content |
| 12 | Conceptually a hypothesis should be: | | | | | |
| | a) convoluted, complex and generic | b) complex, tough and general | c) simple, clear and specific | d) obscure, complicate and simple | c | simple, clear and specific |
| 13 | Formulating a research problem can be compared to _____. | | | | | |
| | a) laying the Foundation of building | b) building the wall of a home | c) polishing the doors of a building | d) constructing the ceiling of a house | a | laying the Foundation of building |
| 14 | In research, reliability is that quality of a measurement procedure which provides: | | | | | |
| | a) repeatability and accuracy | b) punctuality and accuracy | c) accuracy and speed | d) speed and repeatability | a | repeatability and accuracy |
| 15 | The major characteristics of correlation analysis is to seek out: | | | | | |
| | a) difference among variables | b) variations among variables | c) association among variables | d) regression among variables | c | association among variables |

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| 16 | Which of the following is not data visualization method? | | | | | |
| | a) histogram plot | b) circle and triangle | c) pie chart, bar chart | d) scatter plot | b | circle and triangle |
| 17 | Which type of memory holds the computer startup routine? | | | | | |
| | a) RAM | b) ROM | c) WAN | d) Cache | b | ROM |
| 18 | Which of the following excluded from the domain of Artificial Intelligence? | | | | | |
| | a) computer learning | b) machine learning | c) deep learning | d) text | d | text |
| 19 | Wild animals will become homeless if _____. | | | | | |
| | a) paper mills are destroyed | b) houses are built | c) forests are destroyed | d) ecosystem is taken care of | c | forests are destroyed |
| 20 | Look at this series: 36, 34, 30, 28, 24, __. What number should come next? | | | | | |
| | a) 20 | b) 22 | c) 23 | d) 26 | b | 22 |
| 21 | PON, MLK, JIH, _____, DCB | | | | | |
| | a) GFE | b) EFG | c) JKM | d)GHD | a | GFE |
| 22 | Which of the following is system software? | | | | | |
| | a) Linux | b) MS Office | c) Mozilla | d) Tally | a | Linux |
| 23 | We are going to walk in the mountains _____play football. | | | | | |

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| | a) because | b) so | c) but | d) or | d | or |
| 24 | Which of the following variable cannot be expressed in quantitative terms? | | | | | |
| | a) socio-economic status | b) marital status | c) numerical aptitude | d) professional attitude | d | professional attitude |
| 25 | The section of the CPU that is responsible for performing mathematical operations is: | | | | | |
| | a) memory | b) register unit | c) control unit | d) ALU | d | ALU |

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| 26 | When the production of thing is decreasing, this stage is called: | | | | | |
| | a) Recovery | b) Recession | c) Prosperity | d) Depression | b | Recession |
| 27 | For the first order moving average process $X_t = Z_t + \theta Z_{t-1}; t = 0, \pm 1, \pm 2, \pm 3, \dots$. The corresponding autocovariance function (ACVF) i.e., $\gamma(h) = cov(X_{t+h}, X_t); t = 0, \pm 1, \pm 2, \pm 3, \dots$ is: | | | | | |
| | a) $\gamma(h) = \begin{cases} 1 & \text{if } h = 0 \\ \theta/(1+\theta^2) & \text{if } h = \pm 1 \\ 0 & \text{if } h > 1 \end{cases}$ | b) $\gamma(h) = \begin{cases} \sigma^2(1-\theta) & \text{if } h = 0 \\ \sigma^2\theta & \text{if } h = \pm 1 \\ 0 & \text{if } h > 1 \end{cases}$ | c) $\gamma(h) = \begin{cases} \sigma^2\theta & \text{if } h = 0 \\ \sigma^2(1-\theta) & \text{if } h = \pm 1 \\ 0 & \text{if } h > 1 \end{cases}$ | d) $\gamma(h) = 0$ | b | $\gamma(h) = \begin{cases} \sigma^2(1-\theta) & \text{if } h = 0 \\ \sigma^2\theta & \text{if } h = \pm 1 \\ 0 & \text{if } h > 1 \end{cases}$ |
| 28 | A time series has: | | | | | |
| | a) 2 components | b) 3 components | c) 4 components | d) 5 components | c | 4 components |
| 29 | A time series is a set of data recorded: | | | | | |
| | a) periodically | b) at time or space intervals | c) at successive points of time | d) all | d | all |
| 30 | The word "statistics" is used as: | | | | | |
| | a) singular | b) plural | c) both singular and plural | d) neither singular nor plural | c | both singular and plural |
| 31 | Let R be a relation on the set of rationals Q such that mRn if and only if both m, n are integers. Then R is: | | | | | |
| | a) reflexive and symmetric but not transitive | b) symmetric and transitive but not reflexive | c) transitive and reflexive but not symmetric | d) reflexive, symmetric and transitive | b | symmetric and transitive but not reflexive |
| 32 | If we plot the points of a less than type or more than type frequency distribution, the shape of graph is: | | | | | |
| | a) scatter diagram | b) zig-zag curve | c) parabola | d) ogive curve | d | ogive curve |
| 33 | For a group of 100 candidates, the mean was found to be 40. Later on it was discovered that a value 45 was misread as 54. The correct mean is: | | | | | |

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| | a) 40.50 | b) 39.85 | c) 39.80 | d) 39.91 | d | 39.91 |
| 34 | A man goes from his house to his office at the speed of 20 km/h and return from his office to home at the speed of 30 km/h. His mean speed is: | | | | | |
| | a) 24 km/h | b) $10\sqrt{6}km/h$ | c) 25km/h | d) 30km/h | a | 24 km/h |
| 35 | For further algebraic treatment harmonic mean is: | | | | | |
| | a) suitable | b) not suitable | c) sometimes suitable | d) very suitable | b | not suitable |
| 36 | The function $f(x) = \frac{1}{x}$ on the interval (0,1] is: | | | | | |
| | a) not continuous but uniformly continuous | b) both continuous and uniformly continuous | c) continuous but not uniformly continuous | d) both not continuous and not uniformly continuous | c | continuous but not uniformly continuous |
| 37 | The second quartile of the following set of data, 0, 1, -1 -2, 6, 4, 5, 8, 12, 10, 11 is: | | | | | |
| | a) 4 | b) 5 | c) 6 | d) 8 | b | 5 |
| 38 | For a negatively skewed distribution, the correct relation between mean, median and mode is: | | | | | |
| | a) mean=median=mode | b) mean>median>mode | c) mean<median<mode | d) mode<mean<median | c | mean<median<mode |
| 39 | Which one property out of the following does not hold good in case of standard deviation? | | | | | |
| | a) It is distorted by extreme values | b) It is not very sensitive to sampling fluctuations as compared to other measures. | c) It is a unitless measure of dispersion. | d) It is a most used measure of dispersion. | c | It is a unitless measure of dispersion. |
| 40 | Which of the following formula for standard deviation of a frequency distribution is not correct? | | | | | |
| | a) $\sigma = \sqrt{\frac{1}{N} \sum_i f_i (x_i - \bar{x})^2}$ | b) $\sigma = \sqrt{\frac{1}{N} \sum_i f_i x_i^2 - \bar{x}^2}$ | c) $\sigma = \sqrt{\frac{1}{N} \sum_i f_i x_i^2 - \left(\frac{\sum_i f_i x_i}{N}\right)^2}$ | d) $\sigma = \sqrt{\frac{1}{N} \sum_i f_i x_i^2 - \frac{\sum_i f_i x_i}{N}}$ | d | $\sigma = \sqrt{\frac{1}{N} \sum_i f_i x_i^2 - \frac{\sum_i f_i x_i}{N}}$ |
| 41 | The coefficient of skewness of series A, B and C are 1.00, 0.15 and 0.062 respectively. Which of the three series is less skew? | | | | | |
| | a) A | b) B | c) C | d) no decision | c | C |
| 42 | The dimension of the subspace generated by the set $A = \{(3,0,0), (2,2,0), (1,0,1)\}$ is: | | | | | |
| | a) 0 | b) 1 | c) 2 | d) 3 | d | 3 |
| 43 | Crude death rate, expressed simply as a ratio, provides: | | | | | |
| | a) the probability of babies borned and died during the year under reference | b) the probability of a foetal death during the year reference | c) the probability of dying of a person during the year under reference | d) All | c | the probability of dying of a person during the year under reference |
| 44 | A life-table is most utilised by: | | | | | |
| | a) general | b) life insurance | c) employment | d) All | b | life insurance |

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| | insurance companies | companies | exchanges | | | companies |
| 45 | A population maintaining a constant growth rate is said to be a: | | | | | |
| | a) stationary population | b) mobile population | c) stable population | d) growth population | c | stable population |
| 46 | The confidence limits for the regression coefficient β_{YX} for simple linear regression model with usual notations can be given by the formula: | | | | | |
| | a) $b_{XY} \pm s_b t_{\alpha, n-2}$ | b) $b_{XY} \pm s_b t_{\alpha, n-1}$ | c) $b_{XY} \pm s_b^2 t_{\alpha, n-2}$ | d) $b_{XY} \pm s_b^2 t_{\alpha, n-1}$ | a | $b_{XY} \pm s_b t_{\alpha, n-2}$ |
| 47 | The formula for calculating sample correlation(r) from n paired sample values (X_i, Y_i) is: | | | | | |
| | a) $r = \frac{\sum(X_i - \bar{X})\sum(Y_i - \bar{Y})}{\sqrt{\sum(X_i - \bar{X})^2 \sum(Y_i - \bar{Y})^2}}$ | b) $r = \frac{\sum X_i Y_i}{\sqrt{\sum X_i^2 \sum Y_i^2}}$ | c) $r = \frac{\sum(X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum(X_i - \bar{X})^2 \sum(Y_i - \bar{Y})^2}}$ | d) All | c | $r = \frac{\sum(X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum(X_i - \bar{X})^2 \sum(Y_i - \bar{Y})^2}}$ |
| 48 | The nullity of the linear transformation $L(x, y) = (x + y, x + 2y, y)$ is: | | | | | |
| | a) 0 | b) 1 | c) 2 | d) 3 | a | 0 |
| 49 | The test statistic for testing the significance of $\rho = 0$ with usual notation is: | | | | | |
| | a) $t = \frac{r\sqrt{1-r^2}}{\sqrt{n-2}}$ | b) $t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$ | c) $t = \frac{r\sqrt{n-2}}{1-r^2}$ | d) $t = \frac{r^2(1-r^2)}{n-2}$ | b | $t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$ |
| 50 | If β_{YX} and β_{XY} are two regression coefficients for simple linear regression models, they have: | | | | | |
| | a) same sign | b) opposite sign | c) either same or opposite signs | d) all | a | same sign |
| 51 | Randomization is a process in which the treatments are allocated to the experimental units: | | | | | |
| | a) at the will of the investigator | b) in a sequence | c) with equal probability | d) with subjective probability | c | with equal probability |
| 52 | If an experiment involves two or more treatment in which some treatments are fixed and the others are of random nature, one should choose: | | | | | |
| | a) analysis of variance model | b) component of variance model | c) mixed effect model | d) any of these three model | c | mixed effect model |
| 53 | Which of the following is a subspace of R^3 ? | | | | | |
| | a) $A = \{(x, y, z) \in R^3 y = mx\}$ | b) $A = \{(x, y, z) \in R^3 x \neq 0\}$ | c) $A = \{(x, y, z) \in R^3 x, y \neq 0\}$ | d) $A = \{(x, y, z) \in R^3 x, y, z \neq 0\}$ | a | $A = \{(x, y, z) \in R^3 y = mx\}$ |
| 54 | In case of a random effect model, the hypothesis which is to be tested with regard to the treatments is: | | | | | |
| | a) $\sigma_\alpha^2 = 0$ | b) $\alpha_i = 0$ | c) $\sum \alpha_i = 0$ | d) $\sum \alpha_i^2 = 0$ | a | $\sigma_\alpha^2 = 0$ |
| 55 | In a fixed effect model $y_{ij} = \mu + \alpha_i + \varepsilon_{ij}; i = 1, 2, \dots, v$ and $j = 1, 2, 3, \dots, n_i$, a linear function of treatment effects $\alpha_1, \alpha_2, \alpha_3, \dots, \alpha_v$ specified by $\sum_{i=1}^v l_i \alpha_i$ is said to be a treatment contrasts of treatment effect if: | | | | | |
| | a) $\sigma_\alpha^2 = 0$ | b) $\alpha_i = \dots = \alpha_v$ | c) $\sum_{i=1}^v l_i = 0$ | d) $\alpha_i \neq \dots \neq \alpha_v$ | c | $\sum_{i=1}^v l_i = 0$ |
| 56 | In a Latin Square Design, number of rows, columns and treatments are: | | | | | |
| | a) all different | b) always equal | c) not necessarily equal | a) all | b | always equal |
| 57 | The statistic-F for testing $H_0: \beta_{YB} = 0$ in a simple regression analysis has degree of freedom: | | | | | |

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| | a) $(n - 2)$ | b) $(1, n - 2)$ | c) $(1, n - 1)$ | d) $(2, n - 2)$ | b | $(1, n - 2)$ |
| 58 | For what values of x , the vectors: $(x, 1), (1, x)$ is a basis of R^2 ? | | | | | |
| | a) $x \neq 0$ | b) $x > 0$ | c) $x < 0$ | d) $x \neq 1, -1$ | d | $x \neq 1, -1$ |
| 59 | If each of X variates is divided by 5 and of Y by 10, then b'_{YX} by coded values is (for simple regression model): | | | | | |
| | a) half of b_{YX} | b) same as b_{YX} | c) twice of b_{YX} | d) thrice of b_{YX} | a | half of b_{YX} |
| 60 | The height of persons in a country is a random variable of the type: | | | | | |
| | a) continuous | b) discrete | c) neither discrete nor continuous | d) continuous as well as discrete | a | continuous |
| 61 | If X and Y are two random variables, the covariance between the variables $aX+b$ and $cY+d$ is terms of $\text{COV}(X, Y)$ is: | | | | | |
| | a) $\text{COV}(aX+b, cY+d) = \text{COV}(X, Y)$ | b) $\text{COV}(aX+b, cY+d) = abcd\text{COV}(X, Y)$ | c) $\text{COV}(aX+b, cY+d) = ac\text{COV}(X, Y) + bd$ | d) $\text{COV}(aX+b, cY+d) = ac\text{COV}(X, Y)$ | d | $\text{COV}(aX+b, cY+d) = ac\text{COV}(X, Y)$ |
| 62 | If $X \sim N(\mu, \sigma^2)$, the maximum probability at the point of inflexion of normal distribution is: | | | | | |
| | a) $\frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2}}$ | b) $\frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{1}{2}}$ | c) $\frac{1}{\sigma\sqrt{2\pi}} e^{\frac{1}{2}}$ | d) $\frac{1}{\sqrt{2\pi}} e^{\frac{1}{2}}$ | b | $\frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{1}{2}}$ |
| 63 | Let A and B be square matrices and let B^{-1} exists. Then: | | | | | |
| | a) $\text{Trace}(A) < \text{Trace}(BAB^{-1})$ | b) $\text{Trace}(A) > \text{Trace}(BAB^{-1})$ | c) $\text{Trace}(A) = \text{Trace}(BAB^{-1})$ | d) Can't say | c | $\text{Trace}(A) = \text{Trace}(BAB^{-1})$ |
| 64 | Probability mass function for a binomial distribution with usual notations is: | | | | | |
| | a) $\binom{n}{x} p^n q^{n-x}$ | b) $\binom{n}{x} p^n q^x$ | c) $\binom{n}{x} p^{n-x} q^x$ | d) $\binom{n}{x} p^x q^{n-x}$ | d | $\binom{n}{x} p^x q^{n-x}$ |
| 65 | The distribution function of a continuous uniform distribution of a variable X lying in the interval (a, b) is: | | | | | |
| | a) $\frac{x}{b-a}$ | b) $\frac{x-a}{b-a}$ | c) $\frac{b-a}{x-a}$ | d) $\frac{x-b}{b-a}$ | b | $\frac{x-a}{b-a}$ |
| 66 | Chi-square distribution curve with regard to symmetry is: | | | | | |
| | a) symmetrical | b) positively skew | c) negatively skew | d) All | b | positively skew |
| 67 | The range of F-variate is: | | | | | |
| | a) $-\infty$ to ∞ | b) 0 to ∞ | c) 0 to 1 | d) $-\infty$ to 1 | b | 0 to ∞ |
| 68 | A $n \times n$ homogeneous system of equations $Ax = 0$ has a nontrivial solution if: | | | | | |
| | a) $\text{rank}(A) > \text{number of unknowns}$ | b) $\text{rank}(A) < \text{number of unknowns}$ | c) $ A \neq 0$ | d) $\text{rank}(A) = \text{number of unknowns}$ | b | $\text{rank}(A) < \text{number of unknowns}$ |
| 69 | If rolling of two distinct dice at a time, the variable X is defined as the number greater than 2 and the variable Y as the sum of numbers of two dices is less than 10. These bivariate (X, Y) are: | | | | | |
| | a) continuous type | d) discrete type | c) continuous and discrete both | d) neither continuous nor discrete | b | discrete type |
| 70 | If a bivariate normal distribution with parameter $(\mu_X, \mu_Y, \sigma_X^2, \sigma_Y^2, \rho)$ is such that $\sigma_X^2 = \sigma_Y^2, \rho = 0$, the distribution is known as: | | | | | |
| | a) uniform normal | b) rectangular normal | c) elliptical normal | d) circular normal | d | circular normal |

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| 71 | What are the advantages of direct methods for solving the simultaneous algebraic equations? | | | | | |
| | a) Rounding of errors get propagated | b) Quite time consuming | c) Requires more recording of data | Yield a solution after a finite number of steps for any non-singular set of equations | d | Yield a solution after a finite number of steps for any non-singular set of equations |
| 72 | If in a bivariate normal distribution of the variables X and Y, $\rho = 0$, it implies that X and Y are: | | | | | |
| | a) uncorrelated but not independent | b) uncorrelated and independent | c) independent but not uncorrelated | d) correlated and dependent | b | uncorrelated and independent |
| 73 | Given the joint p.m.f. $p_{X,Y}(x, y)$, the conditional p.m.f. of Y given X=x is given by the relation: | | | | | |
| | a) $p_{Y/X}(y/x) = \frac{p_{X,Y}(x, y)}{p_X(x)}$ | b) $p_{Y/X}(y/x) = \frac{p_{X,Y}(x, y)}{p_X(x)p_Y(y)}$ | c) $p_{Y/X}(y/x) = \frac{p_X(x)}{p_Y(y)}$ | d) $p_{Y/X}(y/x) = \frac{p_Y(y)}{p_X(x)}$ | a | $\frac{p_{Y/X}(y/x)}{p_X(x)} = \frac{p_{X,Y}(x, y)}{p_X(x)}$ |
| 74 | Which of the following is not the part of the exploratory factor analysis process? | | | | | |
| | a) Extracting factors | b) Determining the number of factors before the analysis | c) Rotating the factors | d) Refining and interpreting the factors | b | Determining the number of factors before the analysis |
| 75 | The Wishart distribution is a multivariate generalization of: | | | | | |
| | a) Normal distribution | b) t-distribution | c) Chi-square distribution | d) F-distribution | c | Chi-square distribution |
| 76 | Under proportional allocation, the size of the sample from each stratum depends on: | | | | | |
| | a) total sample size | b) size of the stratum | c) population size | d) All | d | All |
| 77 | Variance of \bar{x}_{st} under random sampling, proportional allocation and optimum allocation hold the correct inequality as: | | | | | |
| | a) $V_{ran}(\bar{x}_{st}) \leq V_{prop}(\bar{x}_{st}) \leq V_{opt}(\bar{x}_{st})$ | b) $V_{ran}(\bar{x}_{st}) \geq V_{opt}(\bar{x}_{st}) \geq V_{prop}(\bar{x}_{st})$ | c) $V_{ran}(\bar{x}_{st}) \geq V_{prop}(\bar{x}_{st}) \geq V_{opt}(\bar{x}_{st})$ | d) All | c | $V_{ran}(\bar{x}_{st}) \geq V_{prop}(\bar{x}_{st}) \geq V_{opt}(\bar{x}_{st})$ |
| 78 | The probability of a 4 turning up at least once in two tosses of a fair die is: | | | | | |
| | a) 1/3 | b) 1/6 | c) 1/36 | d) 11/36 | d | 11/36 |
| 79 | People who are available, volunteer, or can be easily recruited are used in the sampling method called: | | | | | |
| | a) convenience sampling | b) simple random sampling | c) cluster sampling | d) systematic sampling | a | convenience sampling |
| 80 | Which of the following statements is true? | | | | | |
| | a) Population mean increases with the increase in sample size | b) Population mean decreases with the increase in sample size | c) Population mean decreases with the decrease in sample size | d) Population mean is a constant value. | d | Population mean is a constant value. |
| 81 | Stratified sampling belongs to the category of: | | | | | |

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| | a) judgement sampling | b) subjective sampling | c) controlled sampling | d) non-random sampling | c | controlled sampling |
| 82 | If $X_1, X_2, X_3, \dots, X_n$ be a random sample from an infinite population where $s^2 = \frac{1}{n} \sum_{i=1}^n (X_i - \bar{X})^2$, the unbiased estimator for the population variance σ^2 is: | | | | | |
| | a) $\frac{1}{n-1} s^2$ | b) $\frac{1}{n} s^2$ | c) $\frac{n}{n-1} s^2$ | d) $\frac{n-1}{n} s^2$ | c | $\frac{n}{n-1} s^2$ |
| 83 | Which of the following methods convergence depends on initial assumed value? | | | | | |
| | a) False position | b) Gauss Seidel method | c) Newton Raphson method | d) Euler method | c | Newton Raphson method |
| 84 | The estimator $\frac{\sum x_i}{n}$ of population mean is: | | | | | |
| | a) an unbiased estimator | b) a consistent estimator | c) both (a) and (b) | d) neither (a) nor (b) | c | both (a) and (b) |
| 85 | If T_n and T_n^* are two unbiased estimators of $\tau(\theta)$ based on the random sample $X_1, X_2, X_3, \dots, X_n$, then T_n is to be UMVUE if and only if: | | | | | |
| | a) $V(T_n) \geq V(T_n^*)$ | b) $V(T_n) \leq V(T_n^*)$ | c) $V(T_n) = V(T_n^*)$ | d) $V(T_n) = V(T_n^*) = 1$ | b | $V(T_n) \leq V(T_n^*)$ |
| 86 | Given the probability statement that $P(4.35 \leq \theta \leq 15.69) = 0.90$, which of the following statement is correct in respect of given probability statement? | | | | | |
| | a) The probability θ lies in the interval (4.35, 15.67) is 0.95. | b) The probability θ lies in the interval (4.35, 15.67) is 0.10. | c) The probability θ lies in the interval (4.35, 15.67) is 0.05 | d) The probability θ lies in the interval (4.35, 15.67) is 0.90. | d | The probability θ lies in the interval (4.35, 15.67) is 0.90 |
| 87 | A matrix B's determinant will be same with the determinant of: | | | | | |
| | a) its adjoint | b) its transpose | c) its inverse | d) its echelon form | b | its transpose |
| 88 | Formula for the confidence interval for the ratio of variances of two normal population involves: | | | | | |
| | a) Chi-square distribution | b) F-distribution | c) t-distribution | d) Z-distribution | b | F-distribution |
| 89 | Test of hypothesis $H_0: \mu = 70$ vs $H_0: \mu > 70$ leads to : | | | | | |
| | a) one-sided left-tailed test | b) one-sided right-tailed test | c) two-tailed test | d) All | b | one-sided right-tailed test |
| 90 | Numerical techniques more commonly involve: | | | | | |
| | a) direct method | b) reduction method | c) iterative method | d) elimination method | c | iterative method |
| 91 | Fisher's exact test is preferably used when: | | | | | |
| | a) a cell frequency is small | b) all cell frequencies are small | c) both (a) and (b) | d) neither (a) nor (b) | c | both (a) and (b) |
| 92 | Kolmogorov Smirnov test is useful as: | | | | | |
| | a) a test of goodness of fit | b) a test of identicalness of two populations | c) a measure of confidence band | d) All | d | All |
| 93 | Kruskal-Wallis analysis of data is mean for: | | | | | |

| | | | | | | |
|-----|---|--|---|---|---|--|
| | a) one way classification | b) two way classification | c) non-classified data | d) both (a) and (b) | a | one way classification |
| 94 | In a linear programming problem with artificial variables, if optimality condition satisfied but artificial variable present at positive level, then the problem has: | | | | | |
| | a) no solution | b) degenerate solution | c) unbounded solution | d) exactly one solution | a | no solution |
| 95 | Which of the following tests is analogous to Chi-square test of goodness of fit? | | | | | |
| | a) Mann-Whitney U-test | b) Kolmogorov-Smirnov test | c) Wilcoxon signed rank test | d) Median test | b | Kolmogorov-Smirnov test |
| 96 | For two events A_1 and A_2 , if $P(A_1) = 2/3$ and $P(A_2) = 3/8$ and $P(A_1 \cap A_2) = 1/4$, then A_1 and A_2 are: | | | | | |
| | a) mutually exclusive but not independent | b) mutually exclusive and independent | c) independent but not mutually exclusive | d) not mutually exclusive and not independent | c | independent but not mutually exclusive |
| 97 | If $P(A B)=1/4$ and $P(B A)=1/3$, then $P(A)/P(B)$ is equal to: | | | | | |
| | a) 3/4 | b) 7/12 | c) 4/3 | d) 1/12 | a | 3/4 |
| 98 | The probability that a leap year will have 53 Sundays is: | | | | | |
| | a) 1/7 | b) 2/7 | c) 2/53 | d) 52/53 | b | 2/7 |
| 99 | Relative error is always: | | | | | |
| | a) positive | b) negative | c) positive and negative | d) zero | c | positive and negative |
| 100 | Non-negative condition in a linear programming model implies: | | | | | |
| | a) a positive coefficient of variables in objective function | b) a positive coefficient of variables in any constraint | c) non-negative value of resource | d) none of a), b) and c) | c | non-negative value of resource |