S.T.E.T WOMEN'S COLLEGE MANNARGUDI

PG AND RESEARCH DEPARTMENT OF COMMERCE

MULTIPLE CHOICE QUESTIONS

SUBJECT: QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS

SUBJECT   CODE: P16MC22

CLASS: I M.COM

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Choose the correct Answer

1. A process by which we estimate the value of dependent variable on the basis of one or more independent variables is called:

    a.Correlation

    b.Regression

    c.Residual

    d.Slope

      Ans: Regression

2.The method of least squares dictates that we choose a regression line where the sum of the square of deviations of the points from the lie is:

    a.Maximum

    b.Minimum

    c.Zero

    d.Positive

      Ans: Minimum

3. A relationship where the flow of the data points is best represented by a curve is called:

    a.Linear relationship

    b.Nonlinear relationship

    c.Linear positive

    d.Linear negative

Ans: Linear relationship

4.All data points falling along a straight line is called:

a.Linear relationship

b.Non linear relationship

c.Residual

d.Scatter diagram

Ans: Linear relationship

5.The value we would predict for the dependent variable when the independent variables are all equal to zero is called:

a.Slope

b.Sum of residual

c.Intercept

d.Difficult to tell

Ans: Intercept

6. The predicted rate of response of the dependent variable to changes in the independent variable is called:

a.Slope

b.Intercept

c.Error

d.Regression equation

Ans: Slope

7. The slope of the regression line of Y on X is also called the:

   a.Correlation coefficient of X on Y

   b.Correlation coefficient of Y on X

   c.Regression coefficient of X on Y

   d.Regression coefficient of Y on X

   Ans: Regression coefficient of Y on X

8. In simple linear regression, the numbers of unknown constants are:

   a.One

   b.Two

   c.Three

   d.Four

   Ans: Two

9. In simple regression equation, the numbers of variables involved are:

   a.0

   b.1

   c.2

   d.3

   Ans: 2

10. If the value of any regression coefficient is zero, then two variables are:

a. Qualitative

b.Correlation

c.Dependent

d.Independent

Ans: Independent

11. A common method known as ratio-to-trend analysis used to

a.Deseasonalize data

b.Take moving average

c.Remove multicollinearity

d.Represent graphical curve

Ans: Deseasonalize data

12. In Statistics, important probability distribution can be classified into

a. 5 types

b. 6 types

c. 7 types

d. 8 types

Ans: 7 types

13. For data set x equals to 95, 85, 80, 70, 60 and y equals to 85, 95, 70, 70, 65, what's residual sum of square?

a. 322.923

b. 324.2837

c. 327.395

d. 340.453

Ans: 327.395

14. While performing correlation, we draw scatter plot to check assumptions of

a.Linearity

b.Multicollinearity

c.Unbiasness

d.Homoscedasticity

Ans: Linearity

15. Pearson coefficient of skewness computes degree of skewness through method

a.Mean - median / variance

b.Mean - median / standard deviation

c.Mean - mode / variance

d.Mean - mode / standard deviation

Ans: mean - mode / standard deviation

16. Time series increases in

a.Decreasing fashion

b.Linear fashion

c.Nonlinear fashion

d.Residual fashion

Ans: Nonlinear fashion

17. Output value generated in result of a chi-square distribution is

a.Always negative

b.Always positive

c.Condition oriented

d.Always zero

Ans: Always positive

18. One of crucial assumptions of ANOVA is

a.Multicollinearity

b.Homogeneity of covariance

c.Estimation of partial coefficient

d.Homoscedascity

Ans: Homogeneity of covariance

19. F-distribution is also referred to as

a.Mean ratio distribution

b.Standard error ratio distribution

c.Residual term ratio distribution

d.Variance ratio distribution

Ans: Variance ratio distribution

20. Statistics used to describe or summarize a set of observations is known to be

a.Descriptive statistics

b.Comparative statistics

c.Referential statistics

d.Inferential statistics

Ans: Descriptive statistics

21. Coefficient of correlation could be

a.Positive

b.Negative

c.Non-linear

d.Positive and Negative both

Ans: Positive and Negative both

22. Normality of distribution can be verified in

a.2 ways

b.3 ways

c.4 ways

d.5 ways

Ans: 2 ways

23. A Type I error occurs when we:

a. Reject a false null hypothesis

b. Reject a true null hypothesis

c. Do not reject a false null hypothesis

d. Do not reject a true null hypothesis

Ans: reject a true null hypothesis

24. In a criminal trial, a Type I error is made when:

a. A guilty defendant is acquitted (set free)

b. An innocent person is convicted (sent to jail)

c. A guilty defendant is convicted

d. An innocent person is acquitted

Ans: an innocent person is convicted (sent to jail)

25. A Type II error occurs when we:

a. Reject a false null hypothesis

b. Reject a true null hypothesis

c. Do not reject a false null hypothesis

d. Do not reject a true null hypothesis

Ans: do not reject a false null hypothesis

26. If a hypothesis is rejected at the 0.025 level of significance, it:

a. Must be rejected at any level

b. Must be rejected at the 0.01 level

c. Must not be rejected at the 0.01 level

d. May or may not be rejected at the 0.01 level

Ans: may or may not be rejected at the 0.01 level

27. In a criminal trial, a Type II error is made when:

a. A guilty defendant is acquitted (set free)

b. An innocent person is convicted (sent to jail)

c. A guilty defendant is convicted

d. An innocent person is acquitted

Ans: a guilty defendant is acquitted (set free)

28. In a one-tail test for the population mean, if the null hypothesis is not rejected when the alternative hypothesis is true, then:

a. A Type I error is committed

b. A Type II error is committed

c. A correct decision is made

d. A two-tail test should be used instead of a one-tail test

Ans: A Type II error is committed

29. If we reject the null hypothesis, we conclude that:

a. There is enough statistical evidence to infer that the alternative hypothesis is true

b. There is not enough statistical evidence to infer that the alternative hypothesis is true

c. There is enough statistical evidence to infer that the null hypothesis is true

d. The test is statistically insignificant at whatever level of significance the test was conducted at

Ans: There is enough statistical evidence to infer that the alternative hypothesis is true

30. Suppose that we reject a null hypothesis at the 5% level of significance. For which of the following levels of significance do we also reject the null hypothesis?

a. 6%

b. 2.5%

c. 4%

d. 3%

Ans: 6%

31. The purpose of hypothesis testing is to:

a. Test how far the mean of a sample is from zero

b. Determine whether a statistical result is significant

c. Determine the appropriate value of the significance level

d. Derive the standard error of the data

Ans: determine whether a statistical result is significant

32. Operations research is the application of _____methods to arrive at the optimal Solutionsto the problems.

a.economical
b.scientific
c.a and b both
d.artistic

Ans: scientific

33. In operations research, the ----------------------------are prepared for situations.

a. Mathematical models
b. Physical models diagrammatic
c. Diagrammatic models

Ans: Mathematical models

34. Which of the following is not the phase of OR methodology?

a. Formulating a problem
b. Constructing a model
c. Establishing controls

d. Controlling the environment

Ans: Controlling the environment

35. The purpose of the transportation approach for locational analysis is to minimize

    a. Total costs
    b. Total shipping costs
    c. Total variable costs
    d. Total fixed costs

Ans: total shipping costs

36. The initial solution to a transportation problem can be generated in any manner, so long as

a. It ignores cost
b. All supply and demand are satisfied
c. Degeneracy does not exist
d. All cells are filled

Ans: All supply and demand are satisfied

37. Which of the following statements about the northwest corner rule is false?

a. One must exhaust the supply for each row before moving down to the next row.
b. One must exhaust the demand requirements of each column before moving to the next column.
c. When moving to a new row or column, one must select the cell with the lowest cost.
d. One must check that all supply and demand constraints are met.

Ans: When moving to a new row or column, one must select the cell with the lowest cost

38. In transportation model analysis the stepping-stone method is used to

a.   Obtain an initial optimum solution
b.   Obtain an initial feasible solution
c.   Evaluate empty cells for potential solution improvements
d.   Evaluate empty cells for possible degeneracy

Ans: Evaluate empty cells for potential solution improvements

39. A transportation problem has a feasible solution when

a.   All of the improvement indexes are positive
b.   The number of filled cells is one less than the number of rows plus the number of columns
c.   All the squares are used
d.   All demand and supply constraints are satisfied

Ans: All demand and supply constraints are satisfied

40. The stepping-stone method

a.   Is an alternative to using the northwest corner rule
b.   Often involves tracing closed paths with a triangular shape
c.   Is used to evaluate the cost effectiveness of shipping goods via transportation routes not currently in the solution
d.   Is used to identify the relevant costs in a transportation problem

Ans: Is used to evaluate the cost effectiveness of shipping goods via transportation routes not currently in the solution

41. In a minimization problem, a negative improvement index in a cell indicates that the

a.   Solution is optimal

b. Total cost will increase if units are reallocated to that cell
c. Total cost will decrease if units are reallocated to that cell
d. Current iteration is worse than the previous one

Ans: Total cost will decrease if units are reallocated to that cell

42. In a minimization problem, a positive improvement index in a cell indicates that

a.   The solution is optimal
b.   The total cost will increase if units are reallocated to that cell
c.   The total cost will decrease if units are reallocated to that cell
d.   There is degeneracy

Ans: The total cost will increase if units are reallocated to that cell

43. Hungarian Method is used to solve

a. A transportation problem
b. A travelling salesman problem
c. A LP problem
d. Both a & b

Ans: A travelling salesman problem

44. OR uses models to help the management to determine its _____

a.Policies
b.Actions
c.Both A and B
d.None of the above

Ans: Both A and B

45. Which technique is used in finding a solution for optimizing a given objective, such as profit maximization or cost reduction under certain constraints?

a.Quailing Theory
b.Waiting Line
c.Both A and B
d.Linear Programming

Ans: Linear Programming

46. The Operations research technique which helps in minimizing total waiting and service costs is

a.Queuing Theory
b.Decision Theory
c.Both A and B
d.None of the above

Ans: Queuing Theory

47. Who coined the term operation research?
 a. J.F.mccloskey
 b. F.N.Trefethem
 c. P.F.Adams
 d. Both A and B

Ans: Both A and B

48. A statement made about a population for testing purpose is called?
a.Statistic
b. Hypothesis
c. Level of Significance
d. Test-Statistic

Ans: Hypothesis

49. If the assumed hypothesis is tested for rejection considering it to be true is called?
a. Null Hypothesis
b. Statistical Hypothesis
c. Simple Hypothesis
d. Composite Hypothesis

Ans: Null Hypothesis

50. A statement whose validity is tested on the basis of a sample is called?
a. Null Hypothesis
b. Statistical Hypothesis
c. Simple Hypothesis
d. Composite Hypothesis

Ans: Statistical Hypothesis

51. A hypothesis which defines the population distribution is called?
a. Null Hypothesis
b. Statistical Hypothesis
c. Simple Hypothesis
d. Composite Hypothesis

Ans: Simple Hypothesis

53. Alternative Hypothesis is also called as?
a. Composite hypothesis
b. Research Hypothesis
c. Simple Hypothesis
d. Null Hypothesis

Ans: Research Hypothesis

54. Interpolation is done by
a. Curve fitting
b. Regression analysis
c. Curve fitting & Regression analysis
d. None of the mentioned

Ans: Curve fitting & Regression analysis

55. Interpolation provides a mean for estimating functions
a. At the beginning points
b. At the ending points
c. At the intermediate points
d. None of the mentioned

Ans: At the intermediate points

56. Interpolation methods are
a. Linear interpolation
b. Piecewise constant interpolation
c. Polynomial interpolation
d. All of the mentioned

Ans: All of the mentioned

57. Which is more expensive?
a. Polynomial interpolation
b. Linear interpolation
c. Polynomial & Linear interpolation
d. None of the mentioned

Ans: Polynomial interpolation

58. Interpolation means
a. Adding new data points
b. Only aligning old data points
c. Only removing old data points
d. None of the mentioned

Ans: Adding new data points

59. Interpolation is a method of
a) Interrelating
b) Estimating
c) Integrating
d) Combining

Ans: Estimating

60. Analysis of variance is a statistical method of comparing the of several populations.

a. Means
b. Variances
c Standard Deviations
d. None of the above

Ans: Means

61. Which of the following is an assumption of one-way ANOVA comparing samples from three or more experimental treatments?

a. The samples associated with each population are randomly selected and are independent from all other samples
b. The response variable within each of the k populations have equal variances
c. All the response variables within the k populations follow a normal distributions
d. All of the above

Ans: All of the above

62. To determine whether the test statistic of ANOVA is statistically significant, it can be compared to a critical value. What two pieces of information are needed to determine the critical value?

a. Mstr, mse
B. Mean, sample standard deviation

C. Expected frequency, obtained frequency

D. Sample size, number of groups

Ans: Sample size, number of groups

63. In binomial probability distribution, the dependents of standard deviations must includes

a.Probability of q

b.Probability of p

c.Trials

d.All of above

Ans: All of above

64.The formula to calculate standardized normal random variable is

a.$X - \mu / \sigma$

b.$X + \mu / \sigma$

c.$X - \sigma / \mu$

d.$X + \sigma / \mu$

Ans: $x - \mu / \sigma$

65.In random experiment, the observations of random variable are classified as

a.Events

b.Composition

c.Trials

d.Functions

Ans: Trials

66.In binomial distribution, the formula of calculating standard deviation is

a.Square root of p

b.Square root of pq

c.Square root of npq
d.Square root of np

Ans: Square root of npq

67.Creating a tangent line at the end of the known data and extending it beyond that limit is termed as

a.Extrapolation
b.Interpolation
c.Antipolation
d.Dentipolation

Ans: extrapolation

68.Method of constructing new data points within the range of a discrete set of known data points is termed as

a.Extrapolation
b.Interpolation
c.Antipolation
d.Dentipolation

Ans: interpolation

69.Process of estimating, beyond the original observation range, the value of a variable on the basis of its relationship with another variable is called

a.Extrapolation
b.Interpolation
c.Antipolation
d.Dentipolation

Ans: Extrapolation

70.Process which produces estimates between known observations, but extrapolation is subject to greater uncertainty and a higher risk of producing meaningless results is called

    a.Extrapolation
    b.Interpolation
    c.Antipolation
    d.Dentipolation

Ans: interpolation

71.Extrapolated experimental results indicate that device can remain n the programmed state for

    a.10 years
    b.100 years
    c.1 year
    d.1000 years

Ans: 100 years

72.The process of finding the values inside the interval is called

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

Ans: Interpolation

73. Newton forward interpolation formula is used for _____ intervals.

a. Open
b. Unequal
c. Equal
d. Closed

Ans: Equal

74.Operation Research is a

a.Science
b.Art
c.Mthematics
d.Both a and b

Ans: Both a and b

75. Direct standardization is used to compare the mortality rates between two countries. This is done because of the difference in

a. Causes of death
b. Numerators
c. Age distributions
d. Denominators

Ans: Age distributions