OMR Answer Sheet No.

Question Booklet Number

3041

B.C.A. (III Sem.) Examination, 2024-25

Booklet Series
C

Bachelor of Computer Application

(Statistical Methods and Application)

(To be filled by the Candidate / निम्न पूर्तियाँ परीक्षार्थी स्वयं भरें)

Roll No. (in figures)
अनुक्रमांक (अंकों में) —— _____

Roll No. (in words)
अनुक्रमांक (शब्दों में) _____

[Time : 2 : 00 Hours
[समय : 2 : 00 घण्टे

[Maximum Marks : 70
[अधिकतम अंक : 70

Name of Examination Centre
परीक्षा केन्द्र का नाम _____

_____
Signature of Invigilator
कक्ष निरीक्षक के हस्ताक्षर

Instructions to the Examinee :

1. Do not open the booklet unless you are asked to do so.
2. **The booklet contains 75 questions. Examinee is required to answer any 65 questions in the OMR Answer-Sheet provided and not in the question booklet. In case Examinee attempts more than 65 Questions, first 65 attempted questions will be evaluated. All questions carry equal marks.**
3. Examine the Booklet and the OMR Answer-Sheet very carefully before you proceed. Faulty question booklet due to missing or duplicate pages/questions or having any other discrepancy should be immediately replaced.

(Remaining Instructions on last page)

परीक्षार्थियों के लिए निर्देश :

1. प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाए।
2. **प्रश्न-पुस्तिका में 75 प्रश्न हैं। परीक्षार्थी को किन्हीं 65 प्रश्नों को दी गई ओ0एम0आर0 आन्सर-शीट पर ही हल करना है। परीक्षार्थी द्वारा 65 से अधिक प्रश्नों को हल करने की स्थिति में, प्रथम 65 उत्तरों को ही मूल्यांकित किया जायेगा। सभी प्रश्नों के अंक समान हैं।**
3. प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा OMR उत्तर-पत्रक को सावधानीपूर्वक देख लें। दोषपूर्ण प्रश्न-पुस्तिका, जिसमें कुछ भाग छपने से छूट गये हों या प्रश्न एक से अधिक बार छप गये हों या किसी भी प्रकार की कमी हो, उसे तुरन्त बदल लें।

(शेष निर्देश अन्तिम पृष्ठ पर)

1. Which of the following is a unit free quantity.

(A) Range

(B) Standard deviation

(C) Coefficient of variation

(D) Arithmetic mean

2. Probable error of correlation coefficient is-

(A) $0.6475\frac{1-r^2}{\sqrt{N}}$

(B) $0.6745\frac{1-r^2}{\sqrt{N}}$

(C) $0.6547\frac{1-r^2}{\sqrt{N}}$

(D) None of these

3. If x_1, x_2, x_3.....x_n are the observations of a given data. Then the mean of the observations will be_____

(A) Sum of observations/total number of observations

(B) Total number of observations/ sum of observations

(C) Both

(D) None

4. The mean of 12 observations is 75. If two observation are discarded, then the mean of the remaining observation is 65. What is the mean of the discarded observations.

(A) 250

(B) 125

(C) 120

(D) Can't be determined due to inefficient data

5. If the mean of observations x, x+3, x+5, x+7 and x+10 is 11, then the mean of last three observation is-

(A) $12\frac{2}{3}$

(B) $12\frac{1}{3}$

(C) $14\frac{2}{3}$

(D) $13\frac{1}{3}$

6. For a distribution the mean, median, mode and standard deviation are 25, 24, 26 & 5 respectively. Then Karl Pearson's coefficient of skewness is equals to-

(A) -0.20

(B) 0.20

(C) 1

(D) -1

7. If the distribution is negatively skewed, then the-

(A) Mean is more than mode

(B) Median is at right to the mode

(C) Mean is less than the mode

(D) Mean is at right to the median

8. The scatter in a series of values about the average is called_____

(A) Central Tendency

(B) Dispersion

(C) Symmetry

(D) None of these

9. The measure of dispersion can never be-

(A) Positive

(B) Zero

(C) Negative

(D) Equal to 2

10. The systematic arrangement of the statistical data in columns or rows is called-

(A) Nature of the data

(B) Tabulation of the data

(C) Classification of the data

(D) Categorisation of data

11. If the mean of frequency distribution is 6.5 & $\Sigma fixi = 120+2K$, $\Sigma fi = 20$ then K is equal to-

(A) 10

(B) 15

(C) 5

(D) 25

12. An important step of statistical investigation is:

(A) Collection of data

(B) Local correspondent

(C) Enumerator

(D) None of the above

13. Stub and caption stands for:

(A) The numerical information

(B) The table heading

(C) The row and column heading

(D) The title of the table

14. Cumulative frequency table is required to find out which of the following-

(A) Mean

(B) Median

(C) Mode

(D) None of the above

15. Merit of a good questionnaire is:

(A) Proper sequence

(B) Proper place

(C) Questions short and clear

(D) All of the above

16. In a histogram, the height of the bars represents:

(A) The frequency of each class

(B) The class interval or range

(C) The cumulative frequency

(D) The mode of the data

17. What is the median of the following ungrouped data: 10, 17, 14, 12, 8?

(A) 8

(B) 12

(C) 14

(D) 17

18. For grouped data, the median is calculated using the formula:

(A) Median $= L + \left(\frac{N/2 - C.F.}{f}\right) \times h$

(B) Median $= \frac{f}{L + C.F.}$

(C) Median $= \frac{C.F. - N/2}{f}$

(D) Median $= \frac{L}{h}$

19. The deciles of a set of data are the values that divides the data into how many equal parts?

(A) 2

(B) 100

(C) 4

(D) 10

20. In the case of a symmetric distribution, which of the following measures of central tendency will be equal?

(A) Mean, median and mode

(B) Mean and median only

(C) Median and mode only

(D) Mode and mean only

21. In a grouped data distribution, which of the following is true for computing the median?

(A) Median is always the value corresponding to the highest frequency class

(B) The class containing the median is determined by the cumulative frequency

(C) The class with the largest range is used to find the median

(D) The median can be directly obtained from the mode of the grouped data

22. Find the Range of the following data:

10, 23, 16, 28, 15, 20, 25

(A) 18

(B) 15

(C) 10

(D) 12

23. What is the Coefficient of Variation (CV) for the following data: Mean=40, Standard Deviation=10?

(A) 5%

(B) 10%

(C) 15%

(D) 25%

24. If the range of a data set is 25 and the maximum value is 40, what is the minimum value?

(A) 25

(B) 10

(C) 15

(D) 30

25. With the help of histogram, we can determine-

(A) Mean

(B) Mode

(C) Median

(D) Quartile

26. Square of Standard deviation is called-

(A) Variance

(B) Mean deviation

(C) Quartile deviation

(D) None of the above

27. The mean age of a group of 80 students is 15 and the coefficient of variation is 80%. What was the standard deviation of their age?

(A) 15

(B) 12

(C) 10

(D) 14

28. The standard deviation of 64 observations is 5. If sum of the observations is 160, what is the sum of squares of these observations?

(A) 1000

(B) 900

(C) 1100

(D) 2000

29. If mean<mode, then skewness is_____

(A) Positively skewed

(B) Negatively skewed

(C) Both (A) and (B)

(D) None of the above

30. The distribution is symmetrical, if

(A) Mode<Meidan<Mean

(B) Mode> Median>Mean

(C) Mode=Median=Mean

(D) Mode<Median>Mean

31. Pearson's coefficient of skewness for a distribution is 0.4 and its coefficient of variation is 30%. Its mode is 88 find the value of mean and median.

(A) Mean=96 ; Median=100

(B) Mean=100 ; Median=96

(C) Mean=10 ; Median=9.6

(D) Mean=9.6 ; Median=10

32. If skewness is zero, the distribution is known as_____

(A) Positively skewed

(B) Negatively skewed

(C) Symmetrical

(D) Asymmetrical

33. The value of Bowley's coefficient of skewness is lies between

(A) (-1, 1)

(B) (0, 1)

(C) (-3, 3)

(D) (0, 3)

34. Karl Pearson's Coefficient of skewness is

(A) $S_k = \frac{3(\bar{x} + \text{Median})}{\sigma}$

(B) $S_k = \frac{3(\bar{x} - \text{Median})}{\sigma}$

(C) $S_k = \frac{3(\bar{x} + \text{Mode})}{\sigma}$

(D) $S_k = \frac{3(\bar{x} - \text{Mode})}{\sigma}$

35. The magnitude of correlation coefficient between any two variables lies between

(A) -1 and +1

(B) -2 and +2

(C) -3 and +3

(D) None of the above

36. If Σd^2 is zero, then Spearman's Rank Correlation Coefficient will be-

(A) -1

(B) 0

(C) 1

(D) None of these

37. In a correlation analysis, if r=0, then we may say that there is_____ between variables.

(A) No correlation

(B) Linear correlation

(C) Perfect correlation

(D) None of these

38. Which graph is used to find median:

(A) Histogram

(B) Pie chart

(C) Pictogram

(D) Ogive

39. What is the mode of the following data set: 11, 12, 13, 14, 14, 15, 15, 15, 16?

(A) 14

(B) 15

(C) 13

(D) 16

40. Which of the following measures the spread of data points in a dataset?

(A) Mean

(B) Median

(C) Mode

(D) Standard Deviation

41. r_{xy} will be negative when

(A) Both x and y are increasing

(B) When x increases and y decreases or vice-versa

(C) both (A) and (B)

(D) None of the above

42. The mode is best described as:

(A) The most frequent value in a data set

(B) The middle value in a data set when arranged in order

(C) The arithmetic average of all the values

(D) The value that divides the data set into two equal parts

43. If the minimum value in a set is 8 and its range is 55, then the maximum value of the set is-

(A) 32

(B) 63

(C) 47

(D) None of these

44. The best statistical relative measure used for comparing the variability of the two series is:

(A) Range

(B) Mean deviation

(C) Standard deviation

(D) Coefficient of variation

45. If mean is 44 and mode is 33, then frequency distribution is

(A) Negatively skewed

(B) Positively skewed

(C) No skewness

(D) None of these

46. If mean is 120 and mode is 130, then frequency distribution is

(A) Negatively skewed

(B) Positively skewed

(C) No skewness

(D) None of these

47. If the Spearman rank correlation coefficient between two variables is -0.7, what does it indicate?

(A) A perfect positive correlation

(B) A strong negative correlation

(C) A weak positive correlation

(D) No correlation

48. If the correlation coefficient between X and Y is 0.6, which of the following statements is correct?

(A) There is a perfect negative linear relationship

(B) There is no linear relationship

(C) There is a moderate positive linear relationship

(D) There is a weak positive linear relationship

49. A frequency polygon is obtained by:

(A) Plotting the midpoints of class intervals and connecting them with straight lines

(B) Drawing bars for each class interval

(C) Plotting the cumulative frequencies

(D) Calculating the mean and plotting it on a graph

50. The value of a variable with highest frequency in a frequency distribution is called:

(A) Mean

(B) Median

(C) Mode

(D) Partition Values

51. The idea of correlation was given by_____.

(A) A.L. Bowley

(B) Karl Pearson

(C) Kelley

(D) None of the above

52. Classification of the students of a college in two categories 'Rural' and 'Urban' is:

(A) Qualitative classification

(B) Quantitative classification

(C) Graphical classification

(D) None of these

53. If mean and mode of some data are 4 & 10 respectively its median will be____

(A) 1.5

(B) 5.3

(C) 16

(D) 6

54. Who stated that statistics is both science and art?

(A) Anderson

(B) Fisher

(C) Tippett

(D) Bowley

55. The Coefficient of variation is a percentage expression for-

(A) Standard deviation

(B) Quartile deviation

(C) Mean deviation

(D) None of the above

56. Cumulative frequency polygon is also known as

(A) Ogive

(B) Histogram

(C) Pictogram

(D) None of these

57. The numbers of Science, Arts and Commerce graduates working in a company are 30, 70 and 50 respectively. If these figures are represented by a pie chart, then what is the angle corresponding to Science graduates?

(A) 36°

(B) 63°

(C) 72°

(D) 120°

58. Arithmetic mean of a frequency distribution is 50. If every frequency is doubled, the arithmetic mean now will be:

(A) 20

(B) 50

(C) 100

(D) 150

59. The most stable measure of central tendency is

(A) Mean

(B) Median

(C) Mode

(D) Partition values

60. Geometric Mean of 5, 10 and x is 10. The value of x is:

(A) 10

(B) 20

(C) 30

(D) 40

61. For unequal values of a series, which of the following has greatest value-

(A) Geometric Mean

(B) Harmonic Mean

(C) Arithmetic Mean

(D) None of the above

62. The relation between mean, median and mode for a moderately asymmetrical frequency distribution is:

(A) Mean = 3 Median – 2 Mode

(B) Mode = 3 Median – 2 Mean

(C) Median = 3 Mean – 2 Mode

(D) None of the above

63. The arithmetic mean of a set of observations is 25 and their harmonic mean is 16, then the geometric mean will be:

(A) 5

(B) 10

(C) 20

(D) 22

64. The average marks of 20 students are 75 but subsequently it was discovered that the marks of two student were mis-read as 53 and 45 instead of 83 and 65 respectively. Find out the correct average marks.

(A) 75

(B) 75.5

(C) 77

(D) 77.5

65. Coefficient of quartile deviation is:

(A) $(Q_3-Q_1)/2$

(B) $(Q_3+Q_1)/(Q_3-Q_1)$

(C) $(Q_3-Q_1)/(Q_3+Q_1)$

(D) $(Q_3-Q_2)/(Q_3-Q_2)$

66. If median=20 and mode=28, then mean is:

(A) 18

(B) 16

(C) 32

(D) 36

67. Which of the following is true?

(A) S.D.>Q.D.>M.D.

(B) S.D.<Q.D.<M.D.

(C) S.D.<M.D.<Q.D.

(D) S.D.> M.D.>Q.D.

68. Which of the following is true?

(A) Median = $Q_2 = D_5 = P_{50}$

(B) Mean = $Q_2 = D_5 = P_{50}$

(C) Mode = $Q_2 = D_5 = P_{50}$

(D) None of the above

69. The standard deviation of 10 items is 15. Each observation is multiplied by 5. The standard deviation of the resulting items is

(A) 15

(B) 75

(C) $15\sqrt{3}$

(D) 3

70. The rank correlation coefficient was given by-

(A) Karl Pearson

(B) Spearman

(C) Fisher

(D) None of these

71. The coefficient of skewness method in which the basis of measuring is deciles and percentiles is known as-

(A) Gary's coefficient of skewness

(B) Karl Pearson's coefficient of skewness

(C) Kelly's coefficient of skewness

(D) Spearman's coefficient of skewness

72. Which of the following is/are the source(s) of secondary data:

(A) Newspapers

(B) Magazines

(C) Production records of a firm

(D) All of the above

73. The objective of diagrammatic representation of data is:

(A) Presentation

(B) Summarization

(C) Classification

(D) Analysis

74. A cumulative frequency table shows:

(A) Only the frequencies of each class

(B) The cumulative sum of frequencies up to each class

(C) The class intervals

(D) None of these

75. Which graphical representation uses bars to show the frequency of data within each class interval?

(A) Histogram

(B) Pie chart

(C) Frequency polygon

(D) Line graph