Statistics MCQ Question Bank

First Paper

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Last updated: November 22, 2023

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1 Basic Concept of Statistics

1. **Who is known as the Father of modern statistics?**
   (a) P.C. Mahalanobis (b) Kazi Motaher Hossain (c) Karl Pearson (d) R.A. Fisher

2. **Which of the following is correct?**
   (a) $\sum_{i=1}^{20} cx_i = nc\sum_{i=1}^{20} x_i$ (b) $\sum_{i=1}^{20} cx_i = nc\sum_{i=1}^{20} x_i$ (c) $\sum_{i=1}^{20} cx_i = c\sum_{i=1}^{20} x_i$ (d) $\sum_{i=1}^{20} cx_i = c^2\sum_{i=1}^{20} x_i$

3. **Which cannot be performed using Univariate data?**
   (a) Central tendency (b) Dispersion (c) Skewness (d) Regression

4. **Cities ranked according to habitability level show – measurement scale**
   (a) Nominal (b) Ratio (c) Interval (d) Ordinal

5. **Which is not an example of shift of scale?**
   (a) $y_i = \frac{x_i}{a}$ (b) $y_i = cx_i$ (c) $y_i = x_i - 2$ (d) $y_i = \frac{cx_i}{d}$

6. **If** $\sum_{i=1}^{20} x_i^2 = 20$ **and** $\sum_{i=1}^{20} x_i = 30$**, what is the value of** $\sum_{i=1}^{20} x_i^2 + \sum_{i=1}^{20} x_i + 100$**?**
   (a) 130 (b) 200 (c) 150 (d) 2130

7. **A subset of a population is called–**
   (a) Constant (b) Variable (c) Sample (d) Scale

8. **How many measurement scales are there?**
   (a) 2 (b) 3 (c) 4 (d) 5

9. **Which of the following is a continuous variable?**
   (a) Number of goals (b) Natural number
   (c) Summation of Fibonacci series (d) Success rate

10. **In which scale of measurement, zero is regarded as true zero?**
    (a) Nominal scale (b) Interval scale (c) Ratio scale (d) Ordinal scale

11. **Which is a discrete variable?**
    (a) Weight (b) Amount of rainfall (c) Distance (d) Grade in a subject

12. $If x_1 = 2, x_2 = -3, x_3 = 7$**, and** $x_4 = 12, \sum_{i=1}^{4} x_i^2 = ?$
    (a) 26 (b) 106 (c) 206 (d) 216

13. $If x_1 = 2, x_2 = 3, x_3 = 4, x_4 = 6$**, and** $x_5 = 5, \sum_{i=1}^{4} x_i^2 = ?$
    (a) 80 (b) 87 (c) 90 (d) 105

14. **Capital and profit belong to a variable which is–**

i. Bivariate
ii. Quantitative
iii. Qualitative

Which one is correct?

(a) i and ii (b) i and iii (c) ii and iii (d) i, ii and iii

15. **Which one falls in the category of interval scale?**

(a) Temperature (b) Speed (c) Distance (d) Film rating

16. **In which scale of measurement, zero is regarded as true zero?**

(a) Nominal scale (b) Interval scale (c) Ratio scale (d) Ordinal scale

17. **Which is a discrete variable?**

(a) Weight (b) Amount of rainfall (c) Distance (d) Grade in a subject

18. **Which one is product of square?**

(a) $\prod x_i^2$ (b) $(\prod x_i)^2$ (c) $\sum x_i^2 \times \sum x$ (d) $\sum x_i^2$

19. **For which variable, determining number of terms is not possible?**

(a) Discrete variable (b) Continuous variable (c) Quantitative variable (d) Qualitative variable

Answer the next three question based on the following information.

A farmer collects growth (in cm) of 10 plants in a month and finds that $\sum x_i = 7$ **and** $\sum x_i^2 = 15$

20. **What is the value of** $\sum(x_i + 4)$**?**

(a) 23 (b) 47 (c) 22 (d) 11

21. **If** $x_1 = 2, x_2 = 3, x_3 = 5, x_4 = 7$ **and** $y_1 = 3, y_2 = 4, y_3 = 5, y_4 = 8; \sum_{i=2}^{4} x_i y_i =$?

(a) 14 (b) 201 (c) 93 (d) 109

22. **From the following table,** $\sum_{i=1}^{4} x_i y_i =$?

X	1	5	3	2
Y	20	12	3	14

(a) 14 (b) 201 (c) 99 (d) 109

23. **What is the value of** $\sum(x_i - 4)^2$**?**

(a) 23 (b) 135 (c) 484 (d) 119

24. **If the square of summation is subtracted the sum of square, the value is -**

(a) -8 (b) 34 (c) 8 (d) -34

25. **Which one is not an example of ratio scale?**

(a) Room no. (b) Income (c) Number of accidents (d) Weight

26. **Which one is discrete?**

(a) Weight (b) Amount of rainfall

(c) Temperature (d) No. of member in a family

27. **Which type of scale of measurement are religion and blood group?**

(a) Interval (b) Ratio (c) Nominal (d) Ordinal

2 Collection, Organization, and Presentation of Data

28. **How many sources of data are there?**

(a) 5 (b) 4 (c) 3 (d) 2

29. **What is the raw material of research?**

(a) Data (b) Theory (c) Graph (d) Mean

30. **Data obtained through direct observation is called–**

(a) Primary data (b) Secondary data (c) Original Data (d) Informal data

Answer the next THREE questions based on the following information

Radius of 80 trees are recorded and this frequency distribution is constructed.

Radius (cm)	0-10	10-20	20-30	30-40
No. of Trees	20	15	21	24

31. **How many trees have radius between 10 and 30?**

(a) 30 (b) 15 (c) 36 (d) 21

32. **How many trees have radius at least 20?**

(a) 44 (b) 45 (c) 24 (d) 21

33. **What percent of trees have radius between 20 and 40?**

(a) 44% (b) 56% (c) 46% (d) 53%

34. **Which formula is used to find angles for Pie Chart?**

(a) $\theta_i = \frac{f_i}{N} \times 100$ (b) $\theta_i = \frac{f_i}{100} \times 360$ (c) $\theta_i = \frac{f_i}{N} \times 360$ (d) $\theta_i = \frac{f_i}{N-1} \times 360$

35. **Who invented Stem and Leaf plot?**

(a) Karl Pearson (b) R.A. Fisher (c) David Cox (d) John Tukey

36. **If all the rats in Sylhet is a population, all the rats in Sylhet Airport is –**

(a) Data (b) Sample (c) Statistics (d) Frequency

37. **Which rule is suggested by H.G. Sturges for determining number of class (k)?**

(a) $K = 1 + 3.322logN$ (b) $K = 1 + 3.222logN$ (c) $K = 1 - 3.222logN$ (d) $K = 1 + 2.332logN$

38. **To show runs per over in a cricket match, which diagram can be used?**

(a) Histogram (b) Bar Diagram (c) Ogive (d) Frequency polygon

3 Measures of Central Tendency

3.1 General Questions

39. **Which statement is correct**

(a) Quartiles are well defined (b) Outliers affect Median

(c) Median is always present in data (d) Quadratic mean is widely used

40. **If a value is zero, which measure is not usable?**

(a) Arithmetic Mean (b) Harmonic Mean (c) Geometrtic Mean (d) Mode

41. **How many measure of central tendency are there?**

(a) 2 (b) 3 (c) 4 (d) 5

42. **Which measure of central tendency is suitable for qualitative variable?**

(a) Arithmetic Mean (b) Harmonic Mean (c) Quadratic Mean (d) Mode

43. **In presence of negative values, which measure is not usable?**

(a) Arithmetic Mean (b) Geometric Mean (c) Quadratic Mean (d) Harmonic Mean

44. **Inappropriate for algebraic analysis–**

i. Median
ii. Mode
iii. Geometric Mean

Which one is true?

(a) i (b) ii (c) i & ii (d) ii & iii

Answer the next two questions based on the following information

Accident	4	6	7	8	9
Frequency	2	0	4	5	1

45. **Fifth Decile is –**

(a) 0 (b) 8.5 (c) 7.5 (d) 8

46. **Which of the following is mode?**

(a) 4 (b) 8 (c) 0 (d) 7

47. **Which measure gives a value from within the values?**

(a) Arithmetic Mean (b) Geometric Mean (c) Median (d) Mode

48. **Which one is not a proper measure of central tendency?**

(a) 2nd Quartile (b) Third Decile (c) 3rd Quintile (d) 110th Percentile

49. **Which one is smallest?**

(a) $\sum_{i=1}^{n}(X_i - Median)^2$ (b) $\sum_{i=1}^{n}(X_i - \bar{X})^2$ (c) $\sum_{i=1}^{n}(X_i - \sigma)^2$ (d) $\sum_{i=1}^{n}(X_i - Mode)^2$

50. **Which measure is not used in determining skewness?**

(a) Arithmetic Mean (b) Geometric Mean (c) Median (d) Mode

51. **When is the relationship $AM = HM = GM$ true?**

(a) All values are equal (b) The values form a geometric progression

(c) The values form an arithmetic progression (d) All values are distinct

52. **In the presence of outlier(s), which measure of central tendency is suitable?**

(a) Arithmetic mean (b) Median (c) Quadratic mean (d) Power mean

53. **If a rate is defined as $R = \frac{c}{d}$, where c is constant, then which measure is perfect?**

(a) Weighted arithmetic mean (b) Harmonic mean

(c) Quadratic mean (d) Weighted geometric mean

54. **Which measure might have more than one value?**

(a) Arithmetic mean (b) Geometric mean (c) Quadratic mean (d) Mode

55. **Which relationship is correct?**

(a) $AM \times GM = HM^2$ (b) $AM \times HM = GM^2$ (c) $AM \times HM = GM^3$ (d) $AM \div GM = HM^2$

56. **With negative observations, which cannot be used**

i. Arithmetic Mean
ii. Geometric Mean
iii. Harmonic Mean

Which one is correct?

(a) i and ii (b) i and iii (c) ii and iii (d) i, ii and iii

3.2 Arithmetic Mean

57. **Arithmetic Mean is –**

i. Rigidly defined
ii. Unaffected by sample fluctuation
iii. Suitable for algebraic analysis

Which one is correct?

(a) i and ii (b) i and iii (c) ii and iii (d) i, ii and iii

58. **Arithmetic Mean of first 25 natural numbers is –**

(a) 12 (b) 13 (c) 14 (d) 26

59. **Arithmetic Mean of two numbers is 25. If a number is 40, what is the other number?**

(a) 40 (b) 50 (c) 25 (d) 10

60. **Number of students in two classes are 50 and 55 and their combined arithmetic mean (AM) of marks is 82. If AM of the first class is 75, what is the AM of the other class?**

(a) 88.36 (b) 88.40 (c) 84.55 (d) 78.33

61. **The summation of deviation of each value from their arithmetic mean is –**

(a) 0 (b) 1 (c) 2 (d) 4

62. **For grouped data, which formula is correct for Arithmetic Mean?**

(a) $\bar{X} = \frac{\sum f_i x_i}{\sum f_i}$ (b) $\bar{X} = \frac{\sum x_i}{N}$ (c) $\bar{X} = \frac{\sum f_i x_i}{n}$ (d) $\bar{X} = \frac{\sum f_i}{N}$

63. **Arithmetic mean of the series 2, 12, 22, $\cdots$, 92 is–**

(a) 45 (b) 46 (c) 47 (d) 55

64. **What is the arithmetic mean of first n odd natural numbers?**

(a) $\frac{n+1}{n}$ (b) n (c) n+1 (d) $\frac{n+1}{2}$

65. **What is the arithmetic mean of first n even natural numbers?**

(a) $\frac{n+1}{2}$ (b) $n+1$ (c) n (d) $\frac{n-1}{2}$

66. **The arithmetic mean of first n natural numbers-**

(a) $\frac{n}{2}$ (b) $\frac{n+1}{2}$ (c) $\frac{n^2}{2}$ (d) $\frac{n^2-1}{2}$

67. **Arithmetic means of three groups having equal no. of items are 30, 32, and 34. What is the combined mean?**

(a) 30.33 (b) 32.67 (c) 32.00 (d) 33.00

3.3 Harmonic Mean

68. **A rate is defined as $R = \frac{c}{d}$; c and d are arbitrary numbers. If c is constant, which mean is used?**

(a) Arithmetic Mean (b) Geometric Mean

(c) Harmonic Mean (d) Weighted Geometric Mean

69. **A rate is defined as $R = \frac{c}{d}$; c and d are arbitrary numbers. If d is constant, which mean is used?**

(a) Arithmetic Mean (b) Geometric Mean

(c) Harmonic Mean (d) Weighted Geometric Mean

70. **A rate is defined as $R = \frac{c}{d}$; c and d are arbitrary numbers. If neither c or d is constant, which mean is used?**

i. Weighted Arithmetic Mean
ii. Weighted Harmonic Mean
iii. Harmonic Mean

Which one is correct?

(a) i and ii (b) i and iii (c) ii and iii (d) i, ii and iii

(a) Arithmetic Mean (b) Geometric Mean

(c) Harmonic Mean (d) Weighted Geometric Mean

71. **Which is the respresentation of Harmonic Mean?**

(a) Mean of Reciprocal (b) Reciprocal of Mean

(c) Reciprocal of Mean of Reciprocal (d) None of the above

3.4 Geometric Mean

72. **Which data set is suitable for Geometric Mean?**

(a) $1, -1, 2, 4, 6, 7$ (b) $1, 2, 4, 8, 16, 32$ (c) $0, 1, 2, 3, 4, 6$ (d) $1, 1, 2, 3, 4, 4, 5$

3.5 Mode

73. **Which of the following may be used to determine mode?**
(a) Histogram (b) Frequency Curve (c) Ogive (d) Frequency Polygon

3.6 Median

74. **Median can be determined from the–**
(a) Histogram (b) Frequency curve (c) Ogive (d) Pie Chart

Answer the next two (2) questions based on the following information

Class	≤ 20	20-25	25-50	50-60	69-70	≥ 70
Frequency	5	10	10	7	5	3
Cumulative Frequency	5	15	25	32	37	40

75. **How many values are between 20 and 70?**
(a) 20 (b) 32 (c) 35 (d) 37

76. **Which one is the median class?**
(a) 20-25 (b) 25-50 (c) 50-60 (d) 60-70

3.7 Partition Values

Answer the next two questions as per the following information.

42 44 59 64 70 72 74 91 94 are 9 values.

77. **What is the 50th percentile?**
(a) 64 (b) 70 (c) 72 (d) 71

78. **Below which value lie 70 percent values?**
(a) 42 (b) 44 (c) 59 (d) 74

79. **Above which value lie 30% observations?**
(a) 3rd Quartile (b) Median (c) 30th Percentile (d) 70th percentile

4 Measures of Dispersion

80. **Which of the following is the best measure of dispersion?**
(a) Range (b) Mean deviation
(c) Standard deviation (d) Coefficient of variation

81. **What is the minimum possible value of standard deviation?**
(a) ∞ (b) -1 (c) 0 (d) 1

82. **For two values, range is found to be 8. What are the values of mean deviation and standard deviation**
(a) (2,4) (b) (4,4) (c) (4,8) (d) (8,8)

83. **What is the standard deviation of first 10 natural numbers?**
(a) 2.87 (b) 3.02 (c) 0 (d) 2.78

84. **Which measure is unit-free?**
(a) Range (b) Mean deviation
(c) Standard deviation (d) Coefficient of variation

5 Moments, Skewness, and Kurtosis

5.1 Moments

85. **Which is not a type of Moments**
(a) Central Moments (b) Raw Moments (c) Corrected Moments (d) Rectified Moments

86. **The second moment around w is –**
(a) $\frac{\sum(x_i-\bar{x})^n}{w}$ (b) $\frac{\sum(x_i-\bar{x})^2}{w}$ (c) $\frac{\sum(x_i-w)^2}{n}$ (d) $\frac{\sum(x_i-w)^n}{2}$

87. **Which quantity uniquely characterizes a distribution?**
(a) Median (b) Quantile (c) Moments (d) Trend
Which one is correct?
(a) i and ii (b) i and iii (c) ii and iii (d) i, ii and iii

88. **Which can be used to measure dispersion?**
(a) μ_2' (b) μ_1 (c) μ_2 (d) μ_1'

89. **The formula of coefficient of variance (CV) is –**
(a) $\frac{\mu_2}{n} \times 100$ (b) $\frac{\mu_2}{\mu_1} \times 100$ (c) $\frac{\mu_2}{\bar{x}} \times 100$ (d) $\frac{\mu_3}{\sigma} \times 100$

90. **First moment around zero is –**
(a) 0 (b) 1 (c) -1 (d) Arithmetic Mean

91. **Which might have a negative value?**
(a) μ_4 (b) μ_3 (c) μ_2' (d) μ_2

92. **2nd Central Moment is –**
(a) $\mu_2 - \mu_1'$ (b) $\mu_2 + \mu_1'$ (c) $\mu_2 - \mu_1'^2$ (d) $\mu_2' - \mu_1'^2$

93. **First central moment is equal to –**
(a) 1 (b) 0 (c) -1 (d) $\bar{x} - a$

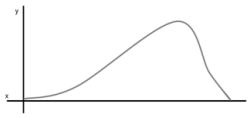
94. **First moment around a is equal to –**
(a) 1 (b) 0 (c) -1 (d) $\bar{x} - a$

95. **The first raw moment about 3 is -5. What is the value of arithmetic mean?**
(a) 2 (b) -2 (c) 0 (d) 8

96. **Moments can be–**
i. positive
ii. not negative
iii. positive or negative
Which one is correct?
(a) i and ii (b) i and iii (c) ii and iii (d) i, ii and iii

5.2 Skewness

97. **The image is an example of –**



(a) Positive Skew (b) Negative Skew (c) No Skew (d) Not detectable

98. **Characteristics of a skewed distributon are –**

i. $Mean \neq Median \neq Mode$
ii. Differences of upper and lower quartiles from median are unequal
iii. Frequency curve is asymmetric

99. **In a distribution,** $\mu_2 = 25, \mu_3 = 20$**, and** $\mu_4 = 2200$**; the distribution is –**

(a) Negativelky skewed (b) leptokurtic (c) Platykurtic (d) Symmetric

100. **For a data,** $Q_3 = 41.6, Q_1 = 17.2, Median = 29, \& AM = 30$**; What is Coefficient of skewness?**

(a) 24.4 (b) 1 (c) 0.03 (d) 29.45

101. **In case of positive skewness, which one is correct?**

(a) $Mean > Median > Mode$ (b) $Mean < Median < Mode$
(c) $Mean = Median = Mode$ (d) $Mean > Median < Mode$

102. **For a symmetrical distribution,** $\beta_1 =$

(a) 1 (b) -1 (c) 0 (d) 3

103. $\sqrt{\beta_1} = -0.23$ **implies–**

(a) Left Skew (b) Symmetry (c) Right Skew (d) Mesokurtic

104. **First 3 moments about 2 are 1, 2 and 8, respectively. What is the arithmetic mena?**

(a) 1 (b) 2 (c) 3 (d) 4

105. **What is the second central moments of first 10 natural numbers?**

(a) 9.90 (b) 9.09 (c) 8.25 (d) 5.67

106. **Frequencies of higher values are smaller in – distribution**

(a) Positively skewed (b) Negatively skewed (c) Symmetric (d) Mesokurtic

107. **Which formula is correct for determining skewness?**

(a) $\gamma_1 = \sqrt{\frac{\mu_3^2}{\mu_2^3}}$ (b) $\gamma_1 = \sqrt{\beta_1^2}$ (c) $\gamma_1 = \sqrt{\frac{\mu_3}{\mu_2^3}}$ (d) $\frac{\mu_2}{\sqrt{\mu_3^2}}$

5.3 Kurtosis

108. **How many types of kurtosis are there?**

(a) 2 (b) 3 (c) 4 (d) 5

109. **The standard deviation of a mesokurtik distribution is 2. What is the value of the 4th central moment?**

(a) 4 (b) 8 (c) 16 (d) 48

110. $\beta_2 = \sqrt{9}$ **implies data are–**

(a) Leptokurtic (b) Platykurtic (c) Mesokurtic (d) Symmetric

111. **For a mesokurtik distribution,** $\beta_2 = --$

(a) 0 (b) -3 (c) 3 (d) 1

5.4 Misc

112. **Which is not used in constructing Box & Whisker Plot?**

(a) Mode (b) X_L (c) $Q_1 \& Q_3$ (d) $Q_1, Q_2 \& Q_3$

113. **In a symmatric distribution–**

i. Arithmetic Mean = Mode = Median
ii. $Q_2 - Q_1 = Q_3 - Q_2$
iii. $Q_1 - X_L = X_H - Q_3$

Which one is true?

(a) i & ii (b) ii & iii (c) i &iii (d) i, ii &iii

114. **Which is not included in five number summary?**

(a) Arithmetic Mean (b) X_H (c) Q_2 (d) Q_3

6 Correlation and Regression

7 Time Series

115. **A linear trend goes along a –**

(a) a curved line (b) a wave (c) straight line (d) circle

116. **Time Series has how many components?**

(a) 2 (b) 3 (c) 4 (d) 5

117. **Which component involves period more than one (01) year?**

(a) Seasonal Variation (b) Cyclic Variation (c) Irregular Variation (d) Random Variation

118. **Which one is not a component of Time Series**

(a) Seasonal Variation (b) Cyclic Variation (c) General Trend (d) Regular Variation

119. **A company is constantly getting greater revenue than previous year; this is–**

(a) Seasonal Variation (b) General Trend (c) Irregular Variation (d) Cyclic Variation

120. **Which is not a method of finding general trend?**

(a) Graphical Method (b) Moving Average (c) Semi-Average (d) Moving Median

Answer the next two questions based on the following table:

Year	2007	2008	2009	2010	2011	2012
Sales	5	35	34	40	42	204

121. **In Semi-Average method, what is the 2nd average?**

(a) 74 (b) 24.67 (c) 95.33 (d) 28

122. **What is the last value of 3-yearly moving average?**

(a) 93.55 (b) 95.53 (c) 95.33 (d) 59.33

123. **Which component of time series is affected by economic changes due to war?**

(a) Trend (b) Seasonal Variation (c) Irregular Variation (d) Cyclic Variation

124. **Demand for warm clothes is higher in winter season ans less in summer. Which component of time series deals with this change?**

(a) Trend (b) Seasonal Variation (c) Irregular Variation (d) Cyclic Variation

125. **Death rates of a country for 7 years are given below:**

Year	2009	2010	2011	2012	2013	2014	2015
Rate	5	7	6	8	7	12	13

In semi-average method, which year will be excluded?

(a) 2012 (b) 2013 (c) 2015 (d) 2009

126. **Which component of time series represents a natural disaster?**

(a) Seasonal Variation (b) General Trend (c) Irregular Variation (d) Cyclic Variation

127. **How many models of time series are there to combine the components?**

(a) 2 (b) 3 (c) 4 (d) 5

8 Published Statistics in Bangladesh

128. **Limitations of published statistics in Bangladesh are –**

i. Wrong data collection method
ii. Insufficient data
iii. Lack of proper training

Which one is correct?

(a) i and ii (b) i and iii (c) ii and iii (d) i, ii and iii

129. **How many sources of published statistics are there in Bangladesh?**

(a) 2 (b) 3 (c) 4 (d) 6

130. **Bangladesh Bureau of Statistics collect –**

(a) Official statistics (b) Non-official statistics (c) Semi-official statistics (d) None of the above

131. **Which statistics are published by an NGO?**

(a) Official statistics (b) Non-official statistics (c) Semi-official statistics (d) None of the above

132. **The primary source of official statistics in Bangladesh is –**

(a) WHO (b) BBS (c) CPD (d) UNDP

133. **In Bangladesh, a census is usually done every – years**

(a) 20 (b) 15 (c) 10 (d) 12

Answer Key:

1. (d) R.A. Fisher
2. (b) $\sum_{i=1}^{20} cx_i = nc\sum_{i=1}^{20} x_i$
3. (d) Regression
4. (d) Ordinal
5. (a) $y_i = \frac{x_i}{a}$
6. (c) 150
7. (c) Sample
8. (c) 4
9. (d) Success rate
10. (c) Ratio scale
11. (d) Grade in a subject
12. (c) 206
13. (c) 90
14. (a) i and ii
15. (a) Temperature
16. (c) Ratio scale
17. (d) Grade in a subject
18. (a) $\prod x_i^2$
19. (b) Continuous variable
20. (b) 47
21. (c) 93
22. (c) 99
23. (d) 119
24. (d) -34
25. (a) Room no.
26. (d) No. of member in a family
27. (c) Nominal
28. (d) 2
29. (a) Data
30. (a) Primary data
31. (c) 36
32. (b) 45
33. (a) 44%
34. (c) $\theta_i = \frac{f_i}{N} \times 360$
35. (d) John Tukey
36. (b) Sample
37. (a) $K = 1 + 3.322logN$
38. (b) Bar Diagram
39. (a) Quartiles are well defined
40. (c) Geometrtic Mean
41. (d) 5
42. (d) Mode
43. (b) Geometric Mean
44. (c) i & ii
45. (c) 7.5
46. (b) 8
47. (d) Mode
48. (d) 110th Percentile
49. (a) $\sum_{i=1}^{n}(X_i - Median)^2$
50. (b) Geometric Mean
51. (a) All values are equal
52. (b) Median
53. (b) Harmonic mean
54. (d) Mode
55. (b) $AM \times HM = GM^2$
56. (c) ii and iii
57. (b) i and iii
58. (b) 13
59. (d) 10
60. (a) 88.36
61. (a) 0
62. (a) $\bar{X} = \frac{\sum f_i x_i}{\sum f_i}$
63. (c) 47
64. (b) n
65. (b) $n + 1$
66. (b) $\frac{n+1}{2}$
67. (c) 32.00
68. (c) Harmonic Mean
69. (a) Arithmetic Mean
70. (a) i and ii
70. (c) Harmonic Mean
71. (c) Reciprocal of Mean of Reciprocal
72. (b) $1, 2, 4, 8, 16, 32$
73. (a) Histogram
74. (c) Ogive
75. (b) 32
76. (b) 25-50
77. (b) 70
78. (d) 74
79. (d) 70th percentile
80. (c) Standard deviation
81. (c) 0
82. (a) (2,4)
83. (a) 2.87
84. (d) Coefficient of variation
85. (d) Rectified Moments
86. (a) $\frac{\sum(x_i - \bar{x})^n}{w}$
87. (c) Moments
87. (d) i, ii and iii
88. (c) μ_2
89. (c) $\frac{\mu_2}{\bar{x}} \times 100$
90. (d) Arithmetic Mean
91. (b) μ_3
92. (d) $\mu_2' - \mu_1'^2$
93. (b) 0
94. (d) $\bar{x} - a$
95. (b) -2

96. (b) i and iii

97. (a) Positive Skew

99. (b) leptokurtic

100. (d) 29.45

101. (a) $Mean > Median > Mode$

102. (c) 0

103. (a) Left Skew

104. (c) 3

105. (c) 8.25

106. (a) Positively skewed

107. (a) $\gamma_1 = \sqrt{\frac{\mu_3^2}{\mu_2^3}}$

108. (b) 3

109. (d) 48

110. (c) Mesokurtic

111. (c) 3

112. (a) Mode

113. (d) i, ii &iii

114. (a) Arithmetic Mean

115. (a) a curved line

116. (c) 4

117. (b) Cyclic Variation

118. (d) Regular Variation

119. (b) General Trend

120. (d) Moving Median

121. (c) 95.33

122. (c) 95.33

123. (c) Irregular Variation

124. (b) Seasonal Variation

125. (b) 2013

126. (c) Irregular Variation

127. (a) 2

128. (d) i, ii and iii

129. (b) 3

130. (a) Official statistics

131. (c) Semi-official statistics

132. (b) BBS

133. (c) 10