Statistics MCQ Question Bank

First Paper

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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. **What is** $\sum_{i=1}^{n} bx_i$ **equal to?**
   (a) $b\sum_{i=1}^{n} nx_i$ (b) $b\sum_{i=1}^{n} x_i$ (c) $\sum_{i=1}^{n} nx_i$ (d) $bn\sum_{i=1}^{n} x_i$

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

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

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

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

13. **Which is a discrete variable?**
    (a) Length of a rope (b) Weight of books in a library
    (c) Distance (d) No. of particles in atoms

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

15. $If x_1 = 2, x_2 = 3, x_3 = 4, x_4 = 6$, **and** $x_5 = 5, \sum_{i=1}^{4} x_i^2 =?$

(a) 80 (b) 87 (c) 90 (d) 105

16. **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

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

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

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

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

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

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

20. **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) $\sum x_i^2$

21. **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** $\sum x_i^2 = 15$

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

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

23. **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) 117

24. **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

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

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

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

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

27. **Which one is not an example of ratio scale?**
(a) Room no. (b) Income (c) Number of accidents (d) Weight

28. **Which one is discrete?**
(a) Weight (b) Amount of rainfall
(c) Temperature (d) No. of member in a family

29. **Which type of scale of measurement are religion and blood group?**
(a) Interval (b) Ratio (c) Nominal (d) Ordinal

Answer the next two questions based on the following information

$$X = 20, 25, 30, 40$$

30. **Find** $\sum(X_i + 10)$
(a) 150 (b) 155 (c) 125 (d) 250

31. $\sum(X_i - 30)^2$
(a) 25 (b) 30 (c) 40 (d) 35

2 Collection, Organization, and Presentation of Data

32. **How many sources of data are there?**
(a) 5 (b) 4 (c) 3 (d) 2

33. **What is the raw material of research?**
(a) Data (b) Theory (c) Graph (d) Mean

34. **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

35. **How many trees have radius between 10 and 30?**
(a) 30 (b) 15 (c) 36 (d) 21

36. **How many trees have radius at least 20?**
(a) 44 (b) 45 (c) 24 (d) 21

37. **What percent of trees have radius between 20 and 40?**
(a) 44% (b) 56% (c) 46% (d) 53%

38. **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) $\theta_i = \frac{f_i}{N-1} \times 360$

39. **Who invented Stem and Leaf plot?**
(a) Karl Pearson (b) R.A. Fisher (c) David Cox (d) John Tukey

40. **If all the rats in Sylhet is a population, all the rats in Sylhet Airport is –**
(a) Data (b) Sample (c) Statistics (d) Frequency

41. **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) $K = 1 + 2.332logN$

42. **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

43. **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

44. **If a value is zero, which measure is not usable?**
(a) Arithmetic Mean (b) Harmonic Mean (c) Geometrtic Mean (d) Mode

45. **How many measure of central tendency are there?**
(a) 2 (b) 3 (c) 4 (d) 5

46. **Which measure of central tendency is suitable for qualitative variable?**
(a) Arithmetic Mean (b) Harmonic Mean (c) Quadratic Mean (d) Mode

47. **In presence of negative values, which measure is not usable?**
(a) Arithmetic Mean (b) Geometric Mean (c) Quadratic Mean (d) Harmonic Mean

48. **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

49. **Fifth Decile is –**
(a) 0 (b) 8.5 (c) 7.5 (d) 8

50. **Which of the following is mode?**
(a) 4 (b) 8 (c) 0 (d) 7

51. **Which measure always gives a value from within the values?**
(a) Arithmetic Mean (b) Geometric Mean (c) Median (d) Mode

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

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

53. **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) $\sum_{i=1}^{n}(X_i - Mode)^2$

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

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

55. **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

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

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

57. **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

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

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

59. **Which relationship is correct?**

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

60. **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

61. **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

62. **Find the arithmetic mean:** $6, 9, 12, \cdots, 84$

(a) Choice (b) Choice (c) Choice (d) Choice

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

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

64. **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

65. **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

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

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

67. **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) $\bar{X} = \frac{\sum f_i}{N}$

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

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

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

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

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

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

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

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

72. **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

73. **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

74. **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

75. **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

76. **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

77. **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) $1, 1, 2, 3, 4, 4, 5$

78. **Find geometric mean: 2, 4, 8, 16**

(a) 6.65 (b) 6.56 (c) 5.66 (d) 5.56

3.5 Mode

79. **Which of the following may be used to determine mode?**

(a) Histogram (b) Frequency Curve (c) Ogive (d) Frequency Polygon

80. **What is the mode the set: 7, 8, 8, 9, 9, 13, 17, 9, 8, 8**

(a) 17 (b) 9

(c) 8 (d) Cqannot be determined

3.6 Median

81. **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

82. **How many values are between 20 and 70?**

(a) 20 (b) 32 (c) 35 (d) 37

83. **Which one is the median class?**

(a) 20-25 (b) 25-50 (c) 50-60 (d) 60-70

84. **What is the median of the following values: 4, 5, 2, 1, 8, 3**

(a) 1.5 (b) 2 (c) 3.5 (d) 4

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.

85. **What is the 50th percentile?**

(a) 64 (b) 70 (c) 72 (d) 71

86. **Below which value lie 70 percent values?**

(a) 42 (b) 44 (c) 59 (d) 74

87. **Above which value lie 30% observations?**

(a) 3rd Quartile (b) Median (c) 30th Percentile (d) 70th percentile

4 Measures of Dispersion

88. **Which of the following is the best measure of dispersion?**

(a) Range (b) Mean deviation

(c) Standard deviation (d) Coefficient of variation

89. **What is the minimum possible value of standard deviation?**

(a) ∞ (b) -1 (c) 0 (d) 1

90. **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)

91. **What is the standard deviation of first 10 natural numbers?**

(a) 2.87 (b) 3.02 (c) 0 (d) 2.78

92. **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

93. **Which is not a type of Moments**

(a) Central Moments (b) Raw Moments (c) Corrected Moments (d) Rectified Moments

94. **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) $\frac{\sum(x_i-w)^n}{2}$

95. **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

96. **Which can be used to measure dispersion?**

(a) μ_2' (b) μ_1 (c) μ_2 (d) μ_1'

97. **The formula of coefficient of variance (CV) is –**

(a) $\frac{\sqrt{\mu_2}}{n} \times 100$ (b) $\frac{\mu_2}{\mu_1} \times 100$ (c) $\frac{\sqrt{\mu_2}}{\bar{x}} \times 100$ (d) $\frac{\mu_3}{\sigma} \times 100$

98. **First moment around zero is –**

(a) 0 (b) 1 (c) -1 (d) Arithmetic Mean

99. **Which moment is equal to zero?**

(a) First raw moment around 1 (b) Second central moment

(c) First central moment (d) Second raw moment around 0

100. **Which might have a negative value?**

(a) μ_4 (b) μ_3 (c) μ'_2 (d) μ_2

101. **2nd Central Moment is –**

(a) $\mu_2 - \mu'_1$ (b) $\mu_2 + \mu'_1$ (c) $\mu_2 - \mu'^2_1$ (d) $\mu'_2 - \mu'^2_1$

102. **First central moment is equal to –**

(a) 1 (b) 0 (c) -1 (d) $\bar{x} - a$

103. **First moment around a is equal to –**

(a) 1 (b) 0 (c) -1 (d) $\bar{x} - a$

104. **The first raw moment about 3 is -5. What is the value of arithmetic mean?**

(a) 2 (b) -2 (c) 0 (d) 8

105. **Moments can be–**

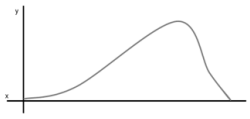
i. positive
ii. not negative
iii. positive or negative

Which one is correct?

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

5.2 Skewness

106. **The following graph is an example of –**



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

107. **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

108. **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

109. **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

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

(a) $Mean > Median > Mode$ (b) $Mean < Median < Mode$

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

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

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

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

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

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

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

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

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

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

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

116. **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

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

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

118. **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

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

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

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

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

121. **What is the relationship between** γ_2 **and** β_2**?**

(a) $\gamma_2 = \beta_2 + 3$ (b) $\gamma_2 = 2\beta_2 - 3$ (c) $\gamma_2 = \beta_2 - 1$ (d) $\gamma_2 = \beta_2 - 3$

5.4 Misc

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

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

123. **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

124. **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

125. **Which is the multipliative time series model?**

(a) $Y_t = T_t \times S_t \times C_t \times R_t$ (b) $Y_t = T_t \times D_t \times C_t \times R_t$

(c) $Y_t = T_t \times P_t \times C_t \times R_t$ (d) $Y_t = T_t \times G_t \times C_t \times R_t$

Answer the next two questions based on the following information

Commodity wise export shipments (In million US$) of Frozen and live fish in Bangladesh are given below.

Months	2022-23 (July-Dec)	2023-24 (Jan-Jun)	2022-23 (July-Dec)
Amount	246.38	175.19	215.13

Table 1: Source:BB

126. **Which component of time series is most evident?**

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

127. **Which value is most probable in the next period?**

(a) 200 (b) 190 (c) 130 (d) 220

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

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

129. **A non-linear trend goes along a –**

(a) a curved line (b) a wave (c) a cubic pattern (d) Any of the above

Answer the next THREE questions based on the following information

Year	2016	2017	2018	2019	2020	2021	2022	2023
USD Exchange Rate	78.35	79.49	82.87	83.26	84.60	84.37	85.80	106.70

Table 2: Source–Investing.com

130. **What is the second value of semi-average method?**

(a) 85.40 (b) 90.37 (c) 91.73 (d) 89.78

131. **What kind of a trend do the data have?**

(a) Upward (b) Downward

(c) Both upward & downward (d) No trend

132. **Which component of time series is visible in the later part of the data?**

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

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

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

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

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

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

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

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

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

137. **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

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

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

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

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

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

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

141. **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

142. **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

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

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

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

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

145. **Which one reflects an irregular variation?**

(a) Fluctuation in production due to war (b) Price hike due to famine

(c) Rise of Temperature to drought (d) Any of the above

8 Published Statistics in Bangladesh

146. **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

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

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

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

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

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

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

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

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

151. **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. (b) $b\sum_{i=1}^{n} x_i$
9. (c) 4
10. (d) Success rate
11. (c) Ratio scale
12. (d) Grade in a subject
13. (d) No. of particles in atoms
14. (c) 206
15. (c) 90
16. (a) i and ii
17. (a) Temperature
18. (c) Ratio scale
19. (d) Grade in a subject
20. (a) $\prod x_i^2$
21. (b) Continuous variable
22. (b) 47
23. (c) 93
24. (c) 99
25. (d) 119
26. (d) -34
27. (a) Room no.
28. (d) No. of member in a family
29. (c) Nominal
30. (b) 155
31. (a) 25
32. (d) 2
33. (a) Data
34. (a) Primary data
35. (c) 36
36. (b) 45
37. (a) 44%
38. (c) $\theta_i = \frac{f_i}{N} \times 360$
39. (d) John Tukey
40. (b) Sample
41. (a) $K = 1 + 3.322 logN$
42. (b) Bar Diagram
43. (a) Quartiles are well defined
44. (c) Geometrtic Mean
45. (d) 5
46. (d) Mode
47. (b) Geometric Mean
48. (c) i & ii
49. (c) 7.5
50. (b) 8
51. (d) Mode
52. (d) 110th Percentile
53. (a) $\sum_{i=1}^{n}(X_i - Median)^2$
54. (b) Geometric Mean
55. (a) All values are equal
56. (b) Median
57. (b) Harmonic mean
58. (d) Mode
59. (b) $AM \times HM = GM^2$
60. (c) ii and iii
61. (b) i and iii
62. (a) Choice
63. (b) 13
64. (d) 10
65. (a) 88.36
66. (a) 0
67. (a) $\bar{X} = \frac{\sum f_i x_i}{\sum f_i}$
68. (c) 47
69. (b) n
70. (b) $n + 1$
71. (b) $\frac{n+1}{2}$
72. (c) 32.00
73. (c) Harmonic Mean
74. (a) Arithmetic Mean
75. (a) i and ii
75. (c) Harmonic Mean
76. (c) Reciprocal of Mean of Reciprocal
77. (b) $1, 2, 4, 8, 16, 32$
78. (c) 5.66
79. (a) Histogram
80. (c) 8
81. (c) Ogive
82. (b) 32
83. (b) 25-50
84. (c) 3.5
85. (b) 70
86. (d) 74
87. (d) 70th percentile
88. (c) Standard deviation
89. (c) 0
90. (a) (2,4)
91. (a) 2.87
92. (d) Coefficient of variation
93. (d) Rectified Moments
94. (a) $\frac{\sum(x_i - \bar{x})^n}{w}$
95. (c) Moments

95. (d) i, ii and iii

96. (c) μ_2

97. (c) $\frac{\sqrt{\mu_2}}{\bar{x}} \times 100$

98. (d) Arithmetic Mean

99. (c) First central moment

100. (b) μ_3

101. (d) $\mu_2' - \mu_1'^2$

102. (b) 0

103. (d) $\bar{x} - a$

104. (b) -2

105. (b) i and iii

106. (a) Positive Skew

108. (b) leptokurtic

109. (d) 29.45

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

111. (c) 0

112. (a) Left Skew

113. (c) 3

114. (c) 8.25

115. (a) Positively skewed

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

117. (b) 3

118. (d) 48

119. (c) Mesokurtic

120. (c) 3

121. (d) $\gamma_2 = \beta_2 - 3$

122. (a) Mode

123. (d) i, ii &iii

124. (a) Arithmetic Mean

125. (a) $Y_t = T_t \times S_t \times C_t \times I_t$

126. (d) Seasonal variation

127. (b) 190

128. (a) a curved line

129. (d) Any of the above

130. (b) 90.37

131. (a) Upward

132. (c) Irregular Variation

133. (c) 4

134. (b) Cyclic Variation

135. (d) Regular Variation

136. (b) General Trend

137. (d) Moving Median

138. (c) 95.33

139. (c) 95.33

140. (c) Irregular Variation

141. (b) Seasonal Variation

142. (b) 2013

143. (c) Irregular Variation

144. (a) 2

145. (d) Any of the above

146. (d) i, ii and iii

147. (b) 3

148. (a) Official statistics

149. (c) Semi-official statistics

150. (b) BBS

151. (c) 10