Statistics MCQ Question Bank

First Paper
Statistics, Variable and Concepts of Different Symbols

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1 Basic Concept of Statistics

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

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

3. **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

4. **Which one falls in the category of interval scale?**
   (a) Temperature   (b) Speed   (c) Distance   (d) Film rating

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

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

7. **What is the value of $\sum (x_i + 4)$?**
   (a) 23   (b) $\sum x_i + 4n$ (c) 22   (d) 11

8. **What is the value of $\sum (x_i - 4)^2$?**
   (a) 23   (b) 135   (c) 484   (d) 121

9. **If the square of summation is subtracted the sum of square, the value is -**
   (a) -8   (b) 34   (c) 8   (d) -34

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

2 Collection, Organization, and Presentation of Data

3 Measures of Central Tendency

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

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

13. **What is the arithmetic mean of first n odd natural numbers?**
    (a) $\frac{n+1}{n}$ (b) n   (c) n+1   (d) $\frac{n+1}{2}$

14. **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	4	1

15. **Fifth Decile is –**

(a) 0   (b) 8   (c) 7   (d) 6

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

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

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

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

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

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

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

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

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

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

21. **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

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

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

23. **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

Answer the next two questions as per the following information.

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

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

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

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

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

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

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

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

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

28. **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

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

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

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

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

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

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

(a) 23   (b) $\sum x_i + 4n$ (c) 22   (d) 11

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

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

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

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4   Measures of Dispersion

5   Moments, Skewness, and Kurtosis

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

(a) μ_2' (b) μ_1 (c) μ_2 (d) μ_1'

40. **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) $\frac{\mu_3}{\sigma} \times 100$

41. **First moment around zero is –**

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

42. **Which values are used in constructing Box & Whisker Plot?**

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

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

    (a) μ_4 (b) μ_3 (c) μ'_2 (d) μ_2

44. **In a symmatric distribution–**

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

    Which one is true?

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

45. **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

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

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

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

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

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

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

49. **2nd Central Moment is –**

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

6 Correlation and Regression

7 Time Series

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

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

51. **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

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

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

53. **For this data, which method would give the best measure of trend?**
    (a) 3-yearly Moving Average   (b) 4-yearly Moving Average
    (c) Semi-Average   (d) Graphical Method

54. **which component of time series represents a natural disaster?**
    (a) Seasonal Variation   (b) General Trend   (c) Irregular Variation   (d) Cyclic Variation

Answer Key:

1. (c) Ratio scale	19. (b) Geometric Mean	37. (d) -34
2. (d) Grade in a subject	20. (b) $\frac{n+1}{2}$	38. (a) Room no.
3. (c) 206	21. (a) All values are equal	39. (c) μ_2
4. (a) Temperature	22. (b) Median	40. (c) $\frac{\mu_2}{\bar{x}} \times 100$
5. (a) $\prod x_i^2$	23. (b) Harmonic mean	41. (a) 0
6. (b) Continuous variable	24. (b) 70	42. (a) Mode
7. (a) 23	25. (d) 74	43. (b) μ_3
8. (a) 23	26. (d) Mode	44. (d) i, ii &iii
9. (d) -34	27. (d) 70th percentile	45. (d) 29.45
10. (a) Room no.	28. (c) 32.00	46. (a) Left Skew
11. (d) Mode	29. (c) Ratio scale	47. (a) Arithmetic Mean
12. (b) Geometric Mean	30. (d) Grade in a subject	48. (c) Mesokurtic
13. (b) n	31. (c) 206	49. (c) $\mu_2 - \mu_1'^2$
14. (a) i	32. (a) Temperature	50. (b) General Trend
15. (c) 7	33. (a) $\prod x_i^2$	51. (d) Moving Median
16. (b) 8	34. (b) Continuous variable	52. (c) 95.33
17. (d) Mode	35. (a) 23	53. (a) 3-yearly Moving Average
18. (d) 110th Percentile	36. (a) 23	54. (c) Irregular Variation