

SYLHET CADET COLLEGE

FIRST TERM-END EXAMINATION - 2024

CLASS: XII

MULTIPLE CHOICE QUESTIONS

STATISTICS FIRST PAPER

TIME – 25 minutes

FULL MARKS – 25

Set	:A
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Subject Code:	1	2	9
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[N.B. – Answer all the questions. Each question carries ONE mark. Block fully, with a black ball- point pen, the circle of the letter that stands for the correct/best answer in the “Answer sheet” for the Multiple Choice Questions Examination.]

Candidates are asked not to leave any mark or spot on the question paper.

1. 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
2. What is $\sum_{i=1}^n b x_i$ equal to?
- (a) $b \sum_{i=1}^n n x_i$ (b) $b \sum_{i=1}^n x_i$ (c) $\sum_{i=1}^n n x_i$ (d) $bn \sum_{i=1}^n x_i$
3. What is the mode the set: 7, 8, 8, 9, 9, 13, 17, 9, 8, 8
- (a) 17 (b) 9 (c) 8 (d) Cannot be determined
4. 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
5. 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) $\gamma_2 = \beta_2 - 3$
6. A non-linear trend goes along a –
- (a) a curved line (b) a wave (c) a cubic pattern (d) Any of the above
7. 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
8. Which is not an example of shift of scale?
- (a) $y_i = \frac{x_i}{a}$ (b) $y_i = c x_i$ (c) $y_i = x_i - 2$ (d) $y_i = \frac{c x_i}{d}$
9. 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

Answer the next two questions based on the following information

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

10. Find $\sum (X_i + 10)$
- (a) 150 (b) 155 (c) 125 (d) 250
11. $\sum (X_i - 30)^2$
- (a) 25 (b) 30 (c) 40 (d) 35
12. What is the median of the following values: 4, 5, 2, 1, 8, 3
- (a) 1.5 (b) 2 (c) 3.5 (d) 4
13. Which measure always gives a value from within the values?
- (a) Arithmetic Mean (b) Geometric Mean (c) Median (d) Mode

14. Which one is not a proper measure of central tendency?
 (a) 2nd Quartile (b) Third Decile (c) 3rd Quintile (d) 110th Percentile
15. 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
16. Find geometric mean: 2, 4, 8, 16
 (a) 6.65 (b) 6.56 (c) 5.66 (d) 5.56
17. What is the arithmetic mean of first n odd natural numbers?
 (a) $\frac{n+1}{n}$ (b) n (c) n+1 (d) $\frac{n+1}{2}$
18. Which quantity uniquely characterizes a distribution?
 (a) Median (b) Quantile (c) Moments (d) Trend
19. 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
20. 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) $Y_t = T_t \times G_t \times C_t \times R_t$
21. Bangladesh Bureau of Statistics collect –
 (a) Official statistics (b) Non-official statistics (c) Semi-official statistics (d) None of the above

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

22. Which component of time series is most evident?
 (a) Irregular variation (b) Cyclic variation (c) Trend (d) Seasonal variation
23. Which value is most probable in the next period?
 (a) 200 (b) 190 (c) 130 (d) 220
24. Which can be used to measure dispersion?
 (a) μ'_2 (b) μ_1 (c) μ_2 (d) μ'_1
25. $\beta_2 = \sqrt{9}$ implies data are—
 (a) Leptokurtic (b) Platykurtic (c) Mesokurtic (d) Symmetric

“The most valuable commodity I know of is information.” - Gordon Gekko

Answer Key

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|----------------------------------|--------------------------|--|
| 1. (c) 93 | 9. (a) i and ii | 18. (c) Moments |
| 2. (b) $b \sum_{i=1}^n x_i$ | 10. (b) 155 | 19. (d) Any of the above |
| 3. (c) 8 | 11. (a) 25 | 20. (a) $Y_t = T_t \times S_t \times C_t \times R_t$ |
| 4. (c) First central moment | 12. (c) 3.5 | 21. (a) Official statistics |
| 5. (d) $\gamma_2 = \beta_2 - 3$ | 13. (d) Mode | 22. (d) Seasonal variation |
| 6. (d) Any of the above | 14. (d) 110th Percentile | 23. (b) 190 |
| 7. (d) No. of particles in atoms | 15. (a) i and ii | 24. (c) μ_2 |
| 8. (a) $y_i = \frac{x_i}{a}$ | 16. (c) 5.66 | 25. (c) Mesokurtic |
| | 17. (b) n | |