

Model Question Paper
Subject:- Statistics
Class 11th (23-24)

Time Allowed: 3 Hours

Maximum Marks: 70

General Instructions:

1. This Question paper contains - Four sections A, B, C and D. Each section is compulsory.
2. Section A-Question 1 to 10 comprises of 10 questions of 1 mark each (MCQ's, Fill in the blanks, True/False, Assertion-Reason etc.)
3. Section B-Question 11 to 19 comprises of 09 Very Short Answer (VSA)-type questions of 2 marks each.
4. Section C-Question 20 to 28 comprises of 09 Short Answer (SA)-type questions of 3 marks each.
5. Section D-Question 29 to 31 comprises of 3 Long Answer (LSA)-type questions of 5 marks each.

Section A: (1 x 10)

Qno1. Which of the following is the correct relation?

- (a) $\mu_2 = \mu_2' + 1$
- (b) $\mu_2 = \mu_2' + (\mu_1')^2$
- (c) $\mu_2 = \mu_2' - (\mu_1')^2$
- (d) $\mu_2 = \mu_2' + \mu_1'$

Qno2. Mean deviation is minimum, when deviation is taken from

- (a) Mean
- (b) Median
- (c) Mode
- (d) Zero

Qno3. The correlation between the two variables is unity, there is:-

- (a) Perfect correlation
- (b) Perfect positive correlation
- (c) Perfect negative correlation
- (d) No correlation

Qno4. The range of correlation coefficient is -----

Qno5 Co-efficient of Variation, C. V. = -----

Qno6. In skewness and kurtosis $\beta_1 =$ -----

Qno 7. Standard deviation is the _____ of variance?

Qno8. Name the founder member of Indian Statistical Institute Kolkata -----

Qno 9. Solution of the inequality: - $x/4 > 9/4$ is

(a) $x > 9$

(b) $x = 9$

(c) $x < 9$

(d) $x = 0$

Qno10. The Rank Correction method was propounded by

(a) Spearman

(b) Pearson

(c) Wilcoxon

(d) Likert

Section B: (2 x 9)

Qno11. Give a brief historical view of Statistics.

Qno12. Name the types of bar diagrams.

Qno13. Enlist the important characteristics of measures of skewness.

Qno14. Name the types of correlation.

Qno15. Calculate range and Co-efficient of Range

4, 8, 10, 3, 8, 7, 4, 2

Qno16. Distinguish between skewness and kurtosis.

Qno17. Name any four input devices in computer

Qno18. Write a few lines on flow chart.

Qno19. Solve the inequality: $2x-5 > x-10/3$

Section C: (3 x 9)

Qno20. Name the types of data and their sources?

Qno21. Name the methods of collecting data? Describe the questionnaire method?

Qno22. Enlist the importance of statistics in Integrated research.

Qno23.

Calculate H. M. to the following data

X	2	4	6	8	10
F	10	20	30	20	10

Qno24. The ranking of 10 students in two subjects are as follows.

Math's	3	5	8	4	7	10	2	1	6	9
Statistics	6	4	9	8	1	2	3	10	5	7

What is the coefficient of Rank Correlation.

Qno25. Find the mean and Median of the weekly earnings from the following table

Weekly earnings in Rs	10	12	14	16	18	20	22
Number of Employees	3	6	10	15	24	42	75

Q no 26 Define Linear Programming Problem. Write mathematical expression of a general two dimensional linear programming problem.

Qno27. Write empirical relation between mean, median and mode. How this relation changes when data is:

a) **Symmetric** and b) **Asymmetric**

Qno28. Enlist the merits and demerits of the mean and mode.

Section D: (5 x 3)

Qno29. Calculate Mean and Standard deviation of the continuous series.

Mark s	No. of Students
0-10	5
10-20	12
20-30	30
30-40	45
40-50	50
50-60	37
60-70	21

OR

In any two series, where d_1 , d_2 are the deviation from assumed mean, we have $N_1=150$ $\sum d_1 = 180$ $\sum d_2=245320$ $N_2= 200$ $\sum d_2=250$ $\sum d_2= 43850$. Calculate coefficient of variation for both the series and decide which series is more variable.

Qno30. Calculate Karl Pearson coefficient of skewness from the following data

X	F
12.5	28
17.5	42
22.5	54
27.5	108
32.5	129
37.5	61
42.5	45
47.5	33

OR

Evaluate first four raw moments about $A=35$ from the following data

Marks	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70
No. of students	8	12	20	30	15	10	5

Qno31. Draw Less than and More than Ogive to the following data. Mark the median on the graph.

Class Interval	Frequency
0 – 100	10
100 - 200	20
200 – 300	30
300 - 400	40
400 – 500	30
500 - 600	20
600 - 700	10

OR

Draw a Histogram and Frequency polygon to the following data.

Class Interval	Frequency
10 – 19	100
20 – 29	150
30 – 39	250
40 – 49	300
50 – 59	350
60 – 69	300
70 - 79	275
80 – 89	200
90 - 99	150

