

Maxprap. Chapter wise Series Class 10th - Statistics

Class : 10th

Subject: Mathematics

Max. Marks : 50

Duration : 2 Hrs

Sections: A (MCQs), B (Short Answer-I), C (Short Answer-II), D (Long Answer), E (Case-Based).

General Instructions:

- (i). All questions are compulsory.
- (ii). This question paper contains 23 questions divided into five Sections A, B, C, D and E. (iii). Section A comprises of 10 MCQs of 1 mark each. Section B comprises of 5 questions of 2 marks each. Section C comprises of 4 questions of 3 marks each. Section D comprises of 2 question of 5 marks each and Section E comprises of 2 Case Study Based Questions of 4 marks each.
- (iv). There is no overall choice.
- (v). Use of Calculators is not permitted.
- (vi). Draw neat figures wherever required. Take $\pi = 22/7$, wherever required if not stated.

Section A

Questions 1 to 10 carry 1 mark each

1. If the median of the data: 6, 7, $x - 2$, x , 17, 20, written in ascending order, is 16. Then x =

- a) 16 b) 17 c) 18 d) 15

2. For the following distribution:

Marks Below	10	20	30	40	50	60
Number of Students	3	12	27	57	75	80

the modal class is:

- a) 20 – 30 b) 40 – 50 c) 50 – 60 d) 30 – 40

3. Consider the following table:

Class interval	10-14	14-18	18-22	22-26	26-30
Frequency	5	11	16	25	19

The mode of the above data is

- a) 25 b) 24.4 c) 24 d) 23.5

4. The mean of the first 10 prime numbers is

- a) 11.9 b) 12.9 c) 129 d) 1.29

5. If value of each observation in a data is increased by 2, then median of the new data

- a) remains same b) increases by $2n$ c) increases by 2 d) decreases by 2

6. The mean and median of distribution are 14 and 15 respectively. The value of mode is:

- a) 16 b) 13 c) 18 d) 17

7. The mean of 25 observations is 36. If the mean of the first 13 observations is 32 and that of the last 13 observations is 39, then the 13th observation is
 a) 36 b) 13 c) 23 d) 32
8. The mean of the first 10 natural odd numbers is
 a) 9 b) 12 c) 10 d) 11

Assertion(A)/Reason(R) Based (9-10): In the following questions, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.

- a) Both A and R are true and R is the correct explanation of A.
 b) Both A and R are true but R is not the correct explanation of A.
 c) A is true but R is false.
 d) A is false but R is true.

9. Assertion (A): The arithmetic mean of the following given frequency distribution table is 13.81.

x	4	7	10	13	16	19
f	7	10	15	20	25	30

Reason (R): $\bar{x} = \frac{\sum f_i x_i}{\sum f_i}$

10. Assertion (A): If the number of runs scored by 11 players of a cricket team of India are 5, 19, 42, 11, 50, 30, 21, 0, 52, 36, 27 then median is 30.

Reason (R): Median = $\left(\frac{n+1}{2}\right)^{th}$ value, if n is odd.

SECTION – B

Questions 11 to 15 carry 2 marks each

11. Find the mode of the following frequency distribution:

Class	0 - 20	20 - 40	40 - 60	60 - 80	80 - 100
Frequency	8	7	12	5	3

12. The average weight of A, B, C is 45 kg. If the average weight of A and B be 40 kg. and that of B and C be 43 kg, find the weight of B.

13. Find the median of the following distribution:

Marks	0-10	10-20	20-30	30-40	40-50	50-60
Number of students	5	8	20	15	7	5

14. Find mean of the following data:

Class	0 - 15	15 - 30	30 - 45	45 - 60	60 - 75	75 - 90
Frequency	12	15	11	20	16	6

15. If the mean of the following data is 20.6. Find the value of p.

x	10	15	p	25	35
f	3	10	25	7	5

SECTION – C

Questions 16 to 19 carry 3 marks each

16. The following table shows the age of patients admitted in a hospital during a particular week:

Age (in years)	5 - 15	15 - 25	25 - 35	35 - 45	45 - 55	55 - 65
Number of Patients	5	12	20	24	15	4

Find the mean age of the patients.

17. If the median of the following data is 33 then, find the value of m:

Class	0 - 15	15 - 30	30 - 45	45 - 60	60 - 75	75 - 90
Frequency	17	35	40	18	m	2

18. Find median of the following data:

Class Interval	Frequency
130 - 139	4
140 - 149	9
150 - 159	18
160 - 169	28
170 - 179	24
180 - 189	10
190 - 199	7

19. Find the missing frequencies in the following frequency distribution table, if $N = 100$ and median is 32.

Marks	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	Total
Number of students	10	?	25	30	?	10	100

SECTION – D

Questions 20 to 21 carry 5 marks each

20. Find the mean and median of the following distribution:

Class	0 - 20	20 - 40	40 - 60	60 - 80	80 - 100	100 - 120
Frequency	5	8	10	12	7	8

21. Find the mean and the mode of the data given below:

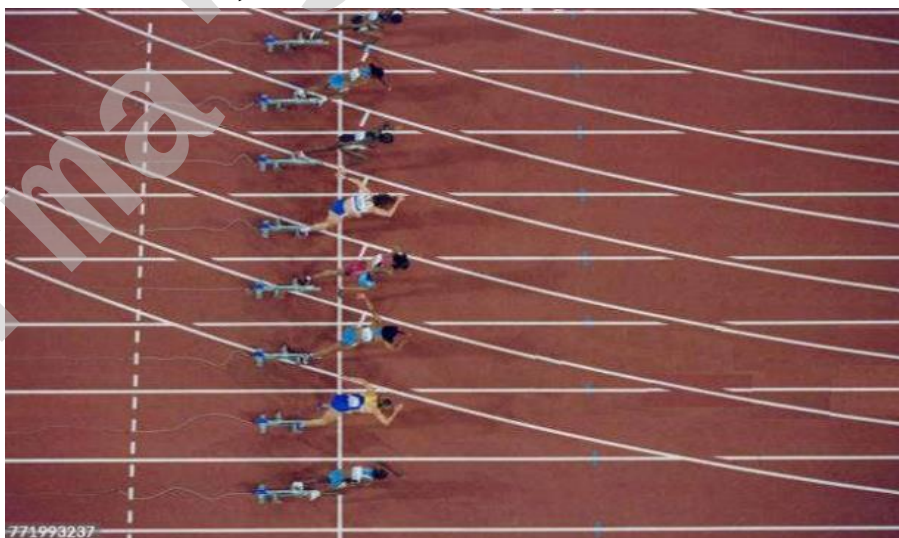
Weight (in kg)	Number of students
40 - 45	5
45 - 50	11
50 - 55	20
55 - 60	24
60 - 65	28
65 - 70	12

SECTION – E (Case Study Based Questions)

Questions 22 & 23 carry 4 marks each

22. Read the following text carefully and answer the questions that follow:

Activities like running or cycling reduce stress and the risk of mental disorders like depression. Running helps build endurance. Children develop stronger bones and muscles and are less prone to gain weight. The physical education teacher of a school has decided to conduct an inter school running tournament in his school premises. The time taken by a group of students to run 100 m, was noted as follows:



Time (in seconds)	0 - 20	20 - 40	40 - 60	60 - 80	80 - 100
Number of students	8	10	13	6	3

Based on the above, answer the following questions:

- a) What is the median class of the above given data? (1)
- b)
 - a. Find the mean time taken by the students to finish the race. (2)

OR

 - b. Find the mode of the above given data. (2)
- c) How many students took time less than 60 seconds? (1)

23. Read the following text carefully and answer the questions that follow:

Gurpreet is very fond of doing research on plants. She collected some leaves from different plants and measured their lengths in mm.



The data obtained is represented in the following table:

Length (in mm):	70-80	80-90	90-100	100-110	110-120	120-130	130-140
Number of leaves:	3	5	9	12	5	4	2

Based on the above information, answer the following questions:

- a) Write the median class of the data.
- b) How many leaves are of length equal to or more than 10 cm?
- c) Find median of the data.

OR

Write the modal class and find the mode of the data.

Statistics Paper Details – Analysis		
Objective Questions		
MCQ	1 marks x 8 question = 8	
Assertion Reason	1 marks x 2 question = 2	
Subjective		
Short type I	2 marks x 5 question = 10	
Short type II	3 marks x 4 question = 12	
Long Type	5 marks x 2 question = 10	
Case Studies Based		
Case 1	4 marks	
Case 2	4 marks	

Total = 50 marks Your Score =