

SAMPLE QUESTION
STATISTICS
CLASS :- XI

SAMPLE QUESTION PAPER
CLASS :- XI (Theory)
STATISTICS

Time :-3 hours

Maximam Marks:-70

General Instractions :-

- (i) All question are compulsory
- (ii) The question paper consists of 18 questions into three sections A,B and C. section A comprises of 4 questions of two marks each, section B comprises 4 question of three marks each and section C comprises 10 questions of five marks each.
- (iii) There is no overall choice. However, internal choice has been provided in 2 question of three marks each and 4 questions of five marks each.
- (iv) Use of simple calculators is permitted.

SECTION-A

- 1) What are the differents between a bar diagram and a histogram?
- 2) State Cauchy-Schwarz's inequality.
- 3) What is meant by skewness?
- 4) Define Paasche's price and quantity index numbers.

SECTION-B

- 5) What is a variable? Distinguish between a discrete and a continuous variable.
- 6) In an AP if m^{th} term is 'n' and n^{th} term is 'm' where $m = n$, find the p^{th} term.

or

Sum of first 25 terms in AP is 525, sum of the next 25 terms is 725 what is the common difference?

- 7) What do you understand by median? What are the points in favour of median?

or

The mean and SD of a Sample of size 10 were found to be 9.5 and 2.5 respectively. Later on, an additional observation became available. This was 15 and was included in the original sample. Find the mean and the standard deviation of the 11 observations.

- 8) What are index numbers? How do you choose the base year for constructing an index number series?

SECTION-C

- 9) Explain the terms 'classification' and 'tabulation' and point out their importance in a statistical investigation.

or

Prepare a blank table showing the distribution of population according to sex and four religions in five age groups in seven different cities.

- 10) Write short notes on Pie diagram and pictogram.
- 11) How many 3 digit positive integers exists that when divided by 7 leave a remainder of 5?

or

Obtain the sum of he sequence

5,5.5, 5.55, 5.555.....to 3o terms.

- 12) If three consecutive coefficients in the expansion of $(1+x)^n$ are in the ratio 6:33:110. Determine the value of n and r .
- 13) Find the sum to 'n' terms of the series $1^2+(1^2+2^2)+(1^2+2^2+3^2)+\dots$
- 14) For 'n' positive observations x_1, x_2, \dots, x_n show that $AM \geq GM$
- 15) The expenditure of 1000 families is given below :

Expenditure (Rs.):	40-59	60-79	80-99	100-119	120-139
No. of families :	50	?	500	?	50

The median and mean for the distribution are both Rs. 87.50 calculate the missing frequencies.

or

Define and discuss variance. Discuss merits and demerits of variance. How does variance is affected by the change of origin and scale?

16) If two groups contain n_1 and n_2 observations with means \bar{x}_1 , and \bar{x}_2 and standard deviations σ_1 , and σ_2 respectively then show that the SD (σ) of the composite group is given by

$$(n_1+n_2)\sigma^2 = (n_1 \sigma_1^2 + n_2 \sigma_2^2) + (n_1 d_1^2 + n_2 d_2^2)$$

Where $d_1 = \bar{x}_1 - \bar{x}$, $d_2 = \bar{x}_2 - \bar{x}$, and \bar{x} is the mean of composite group.

17) Writen down two well-known formula for comparing price levels in two time periods. Show that both Laspeyres' and paasche's price index numbers may be regarded as weighted averages of price relatives.

18) Explain briefly : Time Reversal and Factor Reversal Tests of index number. Test whether the Fisher's index numbers satisfy one or other of these tests.

or

Discuss the different type of errors that affect a price index number.

SAMPLE QUESTION PAPER
CLASS :- XI (Practical)
STATISTICS

Marks:-30

General Instructions :-

- (i) All questions are compulsory
- (ii) Use of simple calculator is permitted

Questions

1) Draw a bar diagram to the following data relating to the population of India. 5

Year	: 1871	1881	1891	1901	1911	1921	1931
Population	: 210	250	290	295	315	320	350
(in millions)							

or

Draw histogram and frequency polygon to present the following data. 5

Age	: 20-25	25-30	30-35	35-40	40-45	45-50
No. of persons	: 50	70	100	180	150	110

2) For the following frequency distribution obtain SD. using change of origin and scale method. 5

Values of sales	0-500	500-1000	1000-2500	2500-3500
(Rs. 000)	3	45	288	150
No. of firms				

or

Ages at death (years) of 50 persons of a town are given below:

36	48	50	45	49	31	50	48	43	42
37	32	40	39	41	47	45	39	43	47
38	39	37	40	32	52	56	31	54	36
51	46	41	55	58	31	42	53	32	44
53	36	60	59	41	53	58	36	38	60

Arrange the data in a frequency distribution in 10 class intervals, and obtain the percentage frequency in each class interval. 5

3) Prove using the following data that the factor reversal test and time reversal test are satisfied by Fisher's ideal formula for index numbers : 10

	Rice		Wheat		Jowar	
Year	Price	Quantity	Price	Quantity	Price	Quantity
1949	4	50	3	10	2	5
1959	10	40	8	8	4	4

4) Viva voice and practical notebook. 5+5