

Goa Vidyaprasarak Mandal's
Gopal Govind Poy Raiturcar College of Commerce and Economics
Ponda -Goa
B.Com. (Semester - III) Supplementary Examination, May 2017

STATISTICAL TECHNIQUES

Duration: 2 hours

Marks: 80

Instructions : i) Attempt all questions
 ii) Figures to the right indicate full marks.

Q1. A. Explain the terms : i) Population ii) Sample (3)

B. The following are the marks obtained by 24 students in a class test of Statistics
 15, 0, 1, 3, 16, 2, 18, 5, 4, 17, 6, 19,
 14, 9, 8, 13, 10, 13, 11, 11, 12, 18, 9, 7.
 Prepare a frequency distribution taking class intervals as 0-4, 4-8, ...
 Also calculate the percentage frequencies. (6)

C. Mean marks of 100 items is found to be 30. If at the time of calculation two items are wrongly taken as 32 and 12 instead of 23 and 11, find the correct mean. (7)

OR

Q1. X. What are the limitations of Statistics? (3)

Y. Find the missing frequency from the following distribution given that the median is 24.

x	0-10	10-20	20-30	30-40	40-50
f	5	25	?	18	7

(6)

Z. Draw a histogram and a frequency polygon from the following data

Class	0-6	6-12	12-18	18-24	24-30	30-36
Frequency	4	8	15	20	12	6

(7)

Q2. A. Distinguish between Primary data and Secondary data. (3)

B. Yield of grains (in quintals) in three consecutive years is given below

Year	Rice	Wheat	Jowar
2002	37	28	35
2003	15	45	90
2004	18	60	42

Represent the above information by percentage bar diagram. (6)

C. Find D_4 and P_{77} for the following frequency distribution

Age in Years	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60	60-65	65-70
Number of teachers	21	19	50	40	16	20	10	10	5	9

(7)

OR

Q2. X. Define the terms class width and class mark. (3)

Y. Calculate the mean deviation from mean for the following.

x	2	4	6	8	10
f	1	4	6	4	1

(6)

Z. Draw a pie diagram to represent the population of a town

Males	Females	Boys	Girls	Total
2000	1800	2000	4200	10000

(7)

Q3. A. Write a short note on Bar Diagram. (3)

B. Calculate the mean for the following frequency distribution (using short cut method)

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Number of Students	6	5	8	15	7	6	3

(6)

C. Calculate the standard deviation for the following data

x	3	4	5	6	7
f	10	25	30	25	10

(7)

OR

Q3. X. The maximum value in a group of observations is 38.5. The coefficient of range is 0.1. Find the minimum value. (3)

Y. The mean marks in Statistics of 100 students was 72. The mean marks of the boys in the class was 75 while their number was 70. Find the mean marks of girls in the class. (6)

Z. For the following data, calculate Karl Pearson's coefficient of skewness.

Age (in years)	10-20	20-30	30-40	40-50	50-60
No. of employees	5	12	15	18	10

(7)

Q4. A. Write a short note on Cyclical component of Time series. (3)

B. Fit a trend line to the following data by method of semi averages.

Year	2002	2003	2004	2005	2006	2007	2008
Sales	102	105	114	110	108	116	112

(6)

C. From the following data, compute price index number by weighted average of price relatives using geometric mean

Commodity	Price		Weight
	Base Year	Current Year	
A	15	17.50	40
B	30	40	20
C	10	15.50	15

(7)

OR

Q4. X. Find Karl Pearson's coefficient of skewness when mean = 10, median = 12 and standard deviation = 20. (3)

Y. Calculate four yearly moving averages for the following data

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999
Production	98	105	103	100	107	106	103	102	112

(6)

Z. Find Laspeyre's price index number and Paasche's quantity index number for the following data

Commodity	Base Year		Current Year	
	Price	Quantity	Price	Quantity
A	30	3	40	5
B	15	2	20	4
C	10	6	30	3
D	6	5	12	10

(7)

Q5. A. What is Kurtosis? (3)

B. Splice the two Index Number Series

Year	1988	1989	1990	1991	1992	1993
Series X	100	120	140	-	-	-
Series Y	-	-	100	120	130	150

C. The following data relates to the sales of Spark Ltd (6)

Year	2004	2005	2006	2007	2008
Sales (in lakhs)	100	120	110	140	80

Fit a straight line trend by the method of least squares and estimate the sales in 2011. (7)

OR

Q5. X. Write a note on Cost of Living Index number. (3)

Y. Calculate Bowley's coefficient of skewness for the following data

Class Interval	0-10	10-20	20-30	30-40	40-50
f	8	16	14	12	10

Z. Calculate Real Income from the following data (6)

Year	1971	1972	1973	1974	1975
Income	700	840	980	1050	1180
Index Number	140	175	200	210	250

(7)

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