

Goa Vidyaprasarak Mandal's
GOPAL GOVIND POY RAITURCAR COLLEGE OF COMMERCE AND ECONOMICS
PONDA - GOA

B.COM. (SEMESTER - III) SUPPLEMENTARY EXAMINATION (New Course)
MAY 2019

STATISTICAL TECHNIQUES

Duration: 2 hours

Marks: 80

- INSTRUCTIONS :** i) Attempt all questions.
ii) Figures to the right indicate full marks.
iii) Graph papers will be supplied on request.
iv) Use of non-programmable calculator is allowed.

Q 1. Answer the following:

- A. Discuss briefly the importance of Statistics in Business and Management. (3)
- B. Prepare a frequency distribution table of the number of letters in a word from the following paragraph
"Heights by great men reached and kept
Were not attained by sudden flight
But they while their companions slept
Were toiling upwards in the night" (6)
- C. The mean 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

Q 1. Answer the following:

- X. Write a short note on limitations of Statistics. (3)
- Y. Find the missing frequency of the following distribution given that the median income is ₹2400.

Income (in '00)	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Frequency	5	25	?	18	7

(6)

Z. Construct a histogram from the following data

Marks	10 – 20	20 – 30	30 – 40	40 – 50	50 – 70	70 – 100
Frequency	6	10	15	10	6	3

(7)

Q 2. Answer the following:

- A. With the help of suitable examples, distinguish between inclusive and exclusive class interval. (3)

B. Draw a pie diagram to represent the following data of expenditure of a family

Items of expenditure	Expenditure (in rupees)
Food	9750
Clothing	1500
House rent	1800
Fuel and lighting	750
Miscellaneous	1200

C. Calculate D_3 and P_{43} for the following data (6)

Class interval	40 – 50	50 – 60	60 – 70	70 – 80
Frequency	10	12	8	14

(7)

OR

Q 2. Answer the following:

X. Explain the terms 'Population' and 'Sample' with an example. (3)

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

Class interval	2 – 4	4 – 6	6 – 8	8 – 10
Frequency	3	4	2	1

(6)

Z. Construct a frequency polygon from the following data

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

(7)

Q 3. Answer the following:

A. What is the relation between mean, median and mode? If the mean is 75 and the mode is 60, find the median. (3)

B. If the arithmetic mean of the data given below is 28, find the missing frequency

Profit (₹ in lakh)	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
Number of shops	12	18	27	?	17	6

(6)

C. From the following data, calculate the Coefficient of Quartile Deviation

Class interval	15 – 25	25 – 35	35 – 45	45 – 55	55 – 65
Frequency	20	18	32	18	12

(7)

OR

Q 3. Answer the following:

X. Distinguish between graphs and diagrams (3 points) (3)

Calculate Karl Pearson's coefficient of skewness for the following data:

Age (in years)	20 – 28	28 – 36	36 – 44	44 – 52	52 – 60
No. of workers	5	7	10	5	2

(6)

Z. In a college having 70% girls, the average of students opting for Statistics is 25%.
If the average of boys opting for Statistics is 15% , find the average of girls opting for Statistics

(7)

Q 4. Answer the following:

A. Explain in brief, the four phases of a business cycle.

(3)

B. Calculate four yearly moving averages for the following data

Years	1980	1981	1982	1983	1984	1985	1986	1987	1988
Values	240	246	244	242	246	251	241	249	253

(6)

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

Commodity	Price	
	Base Year	Current Year
A	50	70
B	40	60
C	80	90
D	110	120
E	20	20

(7)

OR

Q 4. Answer the following:

X. Write a short note on skewness.

(3)

Y. Draw a trend line by the method of semi-averages for the following data

Year	1970	1971	1972	1973	1974	1975	1976
Export(₹ in lakh)	34	38	36	42	45	44	44

(6)

Z. Calculate Laspeyre's price index number and Paasche's quantity index number from the following data

Commodity	Base Year		Current Year	
	Price	Quantity	Price	Quantity
A	11	100	13	95
B	7	30	10	30
C	16	80	18	75
D	15	100	20	90

(7)

Q 5. Answer the following:

A. Write a note on chain base index numbers.

B. Splice the following Index Number Series

Year	1982	1983	1984	1985	1986	1987	1988
Series A	112	138	150	-	-	-	-
Series B	-	-	100	103	110	107	115

(6)

C. Fit a straight line trend by the method of least squares and estimate the sales in 2018.

Year	2011	2012	2013	2014	2015
Sales(₹ in lakhs)	70	74	80	86	90

(7)

OR

Q 5. Answer the following:

X. Distinguish between Fixed Base Index Number and Chain Base 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

(6)

Z. Construct an index number by family budget method

Commodity	Weight	Base Year Price	Current Year Price
A	5	16	20
B	6	40	60
C	8	15	14
D	7	13	15
E	5	21	23

(7)

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