

VidyaVikasMandal's
Shree Damodar College of Commerce & Economics, Margao- Goa
S.Y.BCOM Semester III, Semester End Examination – October 2017
STATISTICAL TECHNIQUES

Duration: 2 hours

Max.Marks: 80

Instructions: 1) All question are compulsory (choice is internal)

2) Start each new question on a fresh page

3) Figures to the right indicate full marks

4) Use of calculators allowed

5) Graph paper will be issued on request

Q.1 Attempt the following:

a) Define Statistics. Explain its importance in economics analysis and planning. (3)

b) Define bar chart and illustrate the following data of expenditure of an middle class family by a bar chart: (6)

Item of expenditure	Food	Clothing	Housing	Fuel	Education	Miscellaneous
% of total expenditure	50	12	17	8	10	3

c) The marks obtained by 15 students in a class test are (7)
12,14,7,9,23,11,8,20,3,17,24,16,19,11,13. Find

i. The mean of their marks

ii. The mean of their marks when the marks of each student are increased by 4

OR

Q.I Attempt the following:

x) Define statistics and statistical methods .Also discuss its limitations. (3)

y) What is a histogram? Draw histogram from the following data: (6)

Class interval	0 – 10	10 – 20	20 – 30	30 – 40
Frequency:	4	7	8	3

z) Calculate the 8th decile and 60th percentile for the following data: (7)

Marks:	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80
Frequency:	3	8	12	14	10	6	5	2

Q.2 Attempt the following:

a) What are different kinds of classification? State how the classification of data is useful.(3)

b) Calculate the mean and standard deviation for the following data: (6)

X:	1	2	3	4	5	6
F:	2	6	12	7	2	1

c) From the data given below construct the index of simple price relative for the 2003, taking 2000 as the base year using Arithmetic mean: (7)

Article	Prices	
	2000	2003
A	50	60
B	100	75
C	125	150
D	200	300
E	25	40

OR

Q.II Attempt the following:

- x) Distinguish between primary and secondary data and discuss the various methods of collecting primary data. (3)
- y) Find the value of a if the median for the data given below is 50 (6)

Class:	10–20	20–30	30–40	40–50	50–60	60–70
Frequency:	2	5	6	a	15	10

- z) Compute the Laspeyre's and Paasche's price index numbers for the following data: (7)

Commodity	Base year		Current year	
	p_0	q_0	p_1	q_1
A	5	25	6	30
B	10	5	15	4
C	3	40	2	50
D	6	30	8	35

Q.3 Attempt the following:

- a) Distinguish between frequency curve and frequency polygon. (3)
- b) From the data given below draw the trend line by the method of semi-averages and estimate the value of the year 2005: (6)

Year:	1995	1996	1997	1998	1999	2000	2001	2002	2003
Value:	19	22	23	24	27	28	30	32	34

- c) Karl Pearson's coefficient of skewness of a distribution is 0.5. It's median and Mode are respectively 42 and 36. Find the coefficient of variation (7)

OR

Q.III Attempt the following:

- x) Define a Histogram and state its uses. (3)

- y) The following data is from a Travel Agency – Easy trips, giving the gross revenues generated by the agency from 1997 to 2006 in millions of rupees. Calculate the four yearly centered moving averages: (6)

Years:	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Revenues:	4	5	7	9	12	14	17	20	21	22

- z) Calculate the S.D. and its coefficient for the following data: (7)

Marks:	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
No. of students:	5	10	15	20	4

Q.4 Attempt the following:

- a) What are the four components of a time series? Explain briefly each component. (3)
b) Calculate the mean deviation from mode of the following data: (6)

Class:	140 – 150	150 – 160	160 – 170	170 – 180	180 – 190	190 – 200
Frequency:	4	6	10	12	9	3

- c) Fit a straight line trend and find trend values for the following data by the method of least squares. Also calculate the production for the year 2001: (7)

Year:	1996	1997	1998	1999	2000
production ('000 tons):	83	92	74	90	166

OR

Q.IV Attempt the following:

- x) What is an index number? State its utility? (3)
y) Find the mode for the following data: (6)

Marks:	0-5	5-10	10-15	15-20	20-25
No. of students:	7	10	16	32	24

- z) Find the three yearly moving averages for the following data: (7)

Year:	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sales(lakh Rs):	20	30	32	50	28	22	40	41	45	47

Q.5 Attempt the following:

- a) Explain with example inclusive and exclusive class intervals. (3)
b) The mean weight of 40 students of a class is 52.75 kg. If the mean weight of 25 students of the class is 51 kg, find the mean weight of the remaining 15 students. (6)
c) Given the following data: (7)

Year:	1995	1996	1997	1998	1999	2000	2001
Monthly pay(in Rs)	10500	11000	11500	12500	13500	14000	14500
Price Index	115	120	130	138	144	150	160

- i. Calculate the real monthly pay for each year.
- ii. In which year did the employer have the highest purchasing power?

OR

Q.V Attempt the following:

x) Explain briefly tabulation of data.

(3)

y) The contents of two groups are as follows:

(6)

Group	Size	Mean	S.D.
I	100	50	10
II	500	60	11

Calculate the mean and Standard deviation for the combined group.

z) Calculate the cost of living index number from the following data:

(7)

Item	price		weights
	Base year	Current Year	
Food	30	47	4
Fuel	8	12	1
clothing	14	18	3
House Rent	22	15	2
Miscellaneous	25	30	1