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Second Year Bcom - Semester III
End semester Examination – October 2015
STATISTICAL TECHNIQUES

Duration: 2hours   **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) Programmable Calculators not allowed
5) Log tables and graph papers will be supplied on request.

Q.1 Attempt the following:

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

b) Draw a histogram and frequency polygon for the following data: **(6)**

Wages :	100-110	110-120	120-130	130-140	140-150
No. of workers:	11	13	16	10	6

c) Calculate the 4th decile and 25th 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

OR

Q.I Attempt the following:

w) Explain the utility of statistics.   **(3)**

x) The data given below gives the imports (in Rs.) of two companies A and B. Draw a suitable diagram: **(6)**

year	Imports	
	Company A	Company B
1998-1999	120	85
1999-2000	135	89
2000-2001	140	95
2001-2002	160	108
2002-2003	170	130

y) Calculate the mean and mode for the following: **(7)**

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

Q.2 Attempt the following:

a) What is classification? What are its objective?   **(3)**

b) Find the missing frequency in the following data, given that mean of the data is 20.6.   **(6)**

x	10	15	20	25	35
f	3	10	?	7	5

c) For the data given below, calculate index number using: **(7)**
  i) Simple arithmetic mean of price relatives.
  ii) Simple geometric mean of price relatives.

Commodity	price	
	Base year	Current Year
A	23	32
B	43	34
C	34	45
D	30	50

Q.II Attempt the following:

w) Explain briefly primary and secondary data. (3)

x) Calculate the median for the following data (6)

Class-interval:	0-10	10-20	20-30	30-40	40-50
Frequency:	3	8	20	12	7

y) Given the following data: (7)

Commodity	Base Year		Current year	
	Price	Quantity	Price	Quantity
A	1	10	1.5	8
B	5	12	6	10
C	8	5	10	2

Compute Price Index number using
1. Laspeyre's Formula
2. Passche's Formula

Q.3 Attempt the following:

a) What do you mean by pie-chart? (3)

b) Calculate the three yearly moving averages for the following data. (6)

Year:	1996	1997	1998	1999	2000	2001	2002	2003
Sales (in 000's Rs.)	154	144	155	210	261	319	353	367

c) Find the standard deviation and coefficient of standard deviation for the following table: (7)

Age (in years):	5-10	10-15	15-20	20-25	25-30
No. of students:	7	12	19	10	2

Q.III Attempt the following:

w) Write a short note on diagrammatic representation of statistical data. (3)

x) Fit a trend line to the following data by the method of least squares and hence estimate the sales in 2010 (6)

Year:	2004	2005	2006	2007	2008
Sales (in 000's Rs.)	18	21	23	27	16

y) From the following table calculate Karl Pearson's coefficient of skewness : (7)

Marks:	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No. of students:	7	9	12	25	11	9	7

Q.4 Attempt the following:

a) State the various components of the time series. (3)

b) Calculate quartile deviation and its coefficient for the following data: (6)

Class:	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency:	0	8	6	9	9	6	6

c) Fit a trend line for the following data by taking average of length four and plot trend line on graph: (7)

Year:	2001	2002	2003	2004	2005	2006	2007	2008
Index No.	120	100	115	125	130	140	135	138

Q.IV Attempt the following:

w) What is an index number? State its limitations. **(3)**

x) Calculate the mean deviation from mean for the following data: **(6)**

Size:	2	3	4	5	6	7
Frequency:	5	4	10	8	3	2

y) Obtain the trend values for the following data by taking the moving average of length five and show trend line on graph. **(7)**

Year:	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Sales(in 000's Rs.)	29	37	43	34	40	42	55	43	47	51	63

Q.5 Attempt the following:

a) Describe the various methods of collecting primary data. **(3)**

b) The mean weight of 80 students in a class is 56.25 kg. The mean weight of boys in the class is 60kg and that of girls is 50 kg. Find out the number of boys and girls is the class. **(6)**

c) Calculate cost of living index number for the following data: **(7)**

Commodity	Price		Weight
	Base Year	Current Year	
A	25	30	1
B	14	18	3
C	22	15	2
D	39	47	4
E	8	12	1

Q.V Attempt the following:

x) Explain briefly tabulation of data. **(3)**

x) Find the missing frequency if the median for the following data is known to be 126. **(6)**

Class interval:	100-110	110-120	120-130	130-140	140-150
Frequency:	5	f	20	10	7

y) Prepare a chain base index number for the data given below: **(7)**

Year:	2001	2002	2003	2004	2005	2006	2007	2008
Index No.:	120	130	138	145	150	156	159	163