

SARASWAT VIDYALAYA'S
SRIDORA CACULO COLLEGE OF COMMERCE & MANAGEMENT STUDIES
KHORLIM, MAPUSA, GOA

B.Com – Honors / B.Com - General (w. e. f. 2017-18)

S.Y.B.COM. SEMESTER END EXAMINATION, JANUARY 2022
SEMESTER III

Subject:- BUSINESS STATISTICS - (GE-3)
(CBCS)

M.Marks:- 80
Duration:- 2 hrs.

Instructions:- 1. Attempt all the questions.

2. Use of non-programmable calculator is allowed.

3. Each question carries equal marks (3 + 6 + 7 =) 16

4. Sub-questions of a question should be answered continuously.

5. Log table / graph paper will be supplied on request.

Q.1. a) Explain in brief the importance of 'sample survey'.

b) The number of factories for four years are given below. Draw a bar diagram

Year	1994-95	1995-96	1996-97	1997-98
No. of factories in(1000)	105.0	93.3	96.7	96.9

c) Calculate median and mode for the following distribution:

Wages(less than Rs).	10	20	30	40	50	60	70
No. of students	8	11	20	25	28	32	40

.OR.

Q.I. x) What is meant by Primary data? How would you collect primary data?

y) Draw Ogives from the following data and hence find the Median from the graph

Monthly wages (in Rs)	50-55	55-60	60-65	65-70	70-75	75-80	80-90
No. of workers	5	10	22	30	16	12	15

z) Find the missing frequency from the following data when the mean is given to be 38.

Marks	10	20	30	40	50	60	70
No. of students	8	11	20	25	-	10	3

Q.2. a) Write short note on the construction of 'Histogram'.

b) Prepare a frequency distribution for the following data giving the heights of 30 children (in cms).

121 133 137 127 132 134 131 126 124 135 139
127 137 130 133 144 131 132 127 140 126 134
128 143 123 125 136 129 141 137.

Take the class intervals as, 120-125, 125-130, Also write relative frequency.

c) Find the three - yearly moving averages for the following data:

Year	1990	1991	1992	1993	1994	1995	1996	1997
Production (Metric tons)	68	62	61	63	65	68	63	67

.OR.

Q.II.x) Write a short note on two dimensional diagrams.

y) The following data is available from the two firms A and B:

Firm	Number of earners	Mean monthly wage (in Rs)	Variance of distribution of wages
A	450	45	49
B	550	55	81

- Which firm pays larger amount as monthly wages?
- Which firm has greater variability in individual wages?
- What is the mean monthly wage of all the workers taken together?

z) Calculate four yearly moving averages for the following data:

Year	1998	1999	2000	2001	2002	2003	2004	2005
No. of students	15	18	17	20	23	25	29	33

Q.3. a) State whether the following statement is true(T) or false(F).

- Attribute is a measurable characteristic of a unit.
- Measures of dispersion refers to a central representative value of the given distribution.
- Geometric mean is defined for non-negative data values.

b) Find the Quartile deviation from the following data.

Height (cms)	120-129	130-139	140-149	150-159	160-169
Students	2	3	5	4	1

- c) The table gives the per capita income and the cost of living index number of a particular commodity. Calculate the real income taking into account the rise in the cost of living.

Year	2001	2002	2003	2004	2005	2006	2007	2008
Cost of living index	100	104	115	160	210	260	300	320
Per capita income.	320	400	480	520	550	590	610	650

.OR.

Q.III.x) Write short note on the models of time series.

- y) The arithmetic mean and standard deviation of 100 items were found to be 40 and 10 respectively. It was later found that one item was wrongly taken as 30 instead of 3. Find the correct mean and standard deviation.
- z) Construct an index number for the following data using weighted average of price relative method:

Commodity	Current year Price in Rs.	Base year Price in Rs.	Weight
A	4.25	5.20	40
C	2.95	3.75	30
D	2.15	1.95	25
E	8.85	8.10	15

Q.4.a) Write down any two formulae for central tendency values (for frequency distribution).

- b) Following data give the product of shirts by Asia company. Fit a straight line trend and find the expected production of shirts for the year 1996.

Year	1989	1990	1991	1992	1993	1994	1995
Nos. of shirts	500	550	600	575	625	600	650

- c) Find the Pearson's Coefficient of skewness for the following data giving the wage distribution of labourers. Mode of the distribution is known to be Rs. 38.4

Wages in Rs.	10-20	20-30	30-40	40-50	50-60	60-70
No. of labourers	27	34	180	136	23	50

.OR.

Q.IV.x) Write a short note on "Kurtosis"

y) Fit a second degree curve to the following data:

Year	2000	2001	2002	2003	2004
Production (In'000 units)	6	8	9	10	12

z) Calculate Bowley's coefficient of skewness from the following data.

Profits (Rs. '000)	0-10	10-20	20-30	30-40	40-50	50-60
No. of Companies	5	8	9	14	15	7

Q.5.a) .Distinguish between

- Ordinary and cumulative frequencies.
- Inclusive and exclusive method of class intervals.

b) For the following data, find Q_1 , first decile and fifth percentile.

Wages (in Rs.)	100-150	150-200	200-250	250-300	300-350	350-500
No. of workers	11	13	27	25	18	6

c) The following table gives the group index number and the weight of different heads of expenditure. Compute the cost of living index number by family budget method.

Group	Weight	Index
Food	35	165
Clothing	15	190
Fuel and lighting	16	170
House Rent	8	183
Miscellaneous	20	151

.OR.

Q.V. x) How would you classify the data base on characteristics?

y) Find the coefficient of mean deviation from mode of the following data.

68 68 73 82 78 73

z) Calculate by Fisher's ideal index number and Value index number for the following data

Commodity	Base year		Current year	
	Quantity	Price	Quantity	Price
A	50	1.20	120	2.00
B	100	1.00	70	1.30
C	60	1.40	70	1.50
D	30	1.60	50	1.80
F	40	1.50	40	1.80

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