

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, OCTOBER 2019
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) Differentiate between Statistics and Parameter

b) Draw a trend line by the method of semi-averages.

Year	2000	2001	2002	2003	2004	2005	2006	2007
Number of students	320	335	350	345	349	360	380	371

Hence find the trend value for the year 2008 from the graph paper.

c) Compute the limits within which we have middle 60 % of the distribution from the following data:

Vegetable weight (Kgm)	15-25	25-35	35-45	45-55	55-65
No. of items	10	12	18	5	15

.OR.

Q.1.x) Differentiate between Population and Sample.

y) Five yearly moving averages of the sales of a company for the years 2001- 2005, 2002-2006 and 2003-2007 are Rs. 30, 34 and 50 lakhs respectively. If the sales for the year 2001 and 2002 were Rs. 17 lakhs and Rs.18 lakhs respectively, find the sales of the year 2007.

z) Verify Empirical relationship for the following data:

x (Less than)	100	200	300	400	500	600
f	0	12	37	67	87	97

Q.2.a) Write short note on 'Range'.

- b) Fit a linear trend by the method of least squares to the following closing prices of limited company listed on stock exchange for 6 months.

Month	1	2	3	4	5	6
Closing price (Rs. lakhs)	1325	1310	1340	1355	1375	1430

- c) Draw a pie diagram for the following data and answer the questions:

Item	Food	Clothing	Rent	Fuel	Miscellaneous
Avg expenditure	150	150	75	60	165

- What is the area of largest sector in the Pie diagram?
- Which item has the lowest sector in the Pie diagram?
- What is the percentage contribution of Clothing and Rent in the Pie diagram, taken together?

.OR.

Q.II.x) Explain the concept of Kurtosis with the help of suitable diagrams.

- y) Fit a parabolic curve of the second degree to the data given below.

Year	2004	2005	2006	2007	2008
Sales (in'000 Rs.)	10	12	13	10	8

- z) Draw a less than ogive and hence find the value of Q_1 and Q_3 for the following data:

Marks	50 – 60	40 – 50	30 – 40	20 – 30	10 – 20	0 – 10
No. of students	10	13	22	16	11	8

Q.3.a) Distinguish between Discrete data and Continuous data.

- b) The scores of two batsmen in an over are listed below. Find which one is a better scorer and which one is more consistent?

Balls	1	2	3	4	5	6
Batsman A	4	6	6	1	0	6
Batsman B	3	4	2	3	4	2

- c) Calculate cost of living index number using family Budget method from the following data:

Group	Price in Rs.		Quantity
	Base year	Current year	Base year
A	6.00	9.00	25
B	16.00	20.00	100
C	2.00	2.50	5
D	25.00	30.00	30
E	5.00	8.00	10

.OR.

Q.III.x) Distinguish between Exclusive and inclusive class intervals.

- y) Given below are the share price (in Rs.) of two companies. Which company is more stable with regards to the price of share ?

Company A (in Rs.)	13	14	15	16	17
Company B (in Rs.)	36	33	37	35	39

- z) The following table gives the prices of vegetables in the two years 2004 and 2005. Taking 2004 as a base year, find the index numbers using:

- Simple aggregative method.
- Simple average of relative method.

Vegetable	Price (Rs) per Kg.	
	2004	2005
Tomatoes	14	28
Green Peas	15	60
Beet roots	16	24
Cauliflower	17	51
Onions	20	10

- Q.4.a) Write a short note on Cyclical Component of Time series.

- b) The following data gives the number of words typed by 11 typists, in a test of 15 minutes. Find the median and mean deviation from median.
670, 550, 600, 590, 650, 700, 580, 800, 620, 640, 570

- c) Calculate simple price index number from the elementary data below:

Year	2010	2011	2012	2013	2014	2015
Price (in Rs)	120	125	127	135	134	136

What would be the index numbers if we shift the base year as 2012

.OR.

- Q.4.b) Write short note on "Seasonal Component" 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) Following data gives $L_p : P_p = 7 : 6$. Find the value of 'a'.

Commodity	Base year		Current year	
	Price	Quantity	Price	Quantity
W	5	1	4	a
X	3	2	4	1
Z	2	3	3	2

Q.5.a) State whether the following statements are true or false. Write "TRUE" for true statement and 'FALSE' for false statement.

- Quartile Deviation depends on only two values.
- Standard deviation is relative measures of variation.
- Mean deviation from Median is minimum.

b) Mean weight of group of 30 students in a class was known to be 45 kgm. Three more students with weight 50 kg, 52 kg and 43 kg joined the class. What is the combine mean weight of all the students?

c) Prepare a frequency table for the following data taking class-intervals of Exclusive type and a class interval of 30 units beginning with first class interval upper class boundary as 110.

150 170 230 140 130 190 150 170 150 120 160 180
210 150 200 120 90 140 170 160 150 130 220 200

Which class-interval has the highest frequency?

.OR.

Q.V.x) Write an appropriate/nearest word in the following:

- The central tendency value which is always possible to calculate for any given elementary data.
- The formula use to calculate the number of class intervals.
- Dispersion value based on Maximum and Minimum value.

y) Find the missing frequency from the following distribution of sales of shops, given that the Modal sale of shops is Rs. 2400:

Sales (in Rs. '00)	0-10	10-20	20-30	30-40	40-50
No. of shops	5	25	-	18	7

z) Prepare a frequency table for the following data taking class-intervals of inclusive type and a class width of 9 units beginning with first class interval upper class limit as 9.

50 72 33 45 38 29 45 67 58 28
12 56 09 23 60 44 27 60 45 48

Also prepare Relative and percentage frequency?

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