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, NOVEMBER 2022
SEMESTER III

Subject:- BUSINESS STATISTICS - I [GE-3 (CC: UCAG101)]   M.Marks:- 80
(CBCS Revised Course)   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.

Q.1. a) Define the following terms:
i) Population
ii) Parameter
iii) Variable

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

Year	2001	2002	2003	2004	2005	2006	2007
Production of bolts	12	15	20	24	29	35	43

Hence find the trend value for production of bolts in 2008.

c) Find the missing frequency from the following distribution of sales of shops, given that the median 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

.OR.

Q.I. x) Is Primary data different from secondary data? Explain.

y) Calculate the three yearly moving averages from the following data and determine the trend values. Which year is having a highest trend value of jute?

Year	2001	2002	2003	2004	2005	2006	2007	2008
Jute Production ('000 quintals)	23	24	20	21	22	25	20	24

z) Calculate mean and upper quartile from the following data.

Age in years.	20 – 25	25 – 30	30 – 35	35 – 40	40 – 45	45 – 50
No. of persons	5	10	15	25	10	5

Q.2. a) Differentiate between Qualitative and Quantitative data.

b) Following data gives the marks obtained by 2 students in seven subjects. Using coefficient of range, find whose performance is consistent.

Hansh	34	35	67	80	23	45	60
Vansh	49	54	45	68	67	45	56

c) Splice the following two index number series:

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Series A	100	120	140	165	180				
Series B					100	103	110	107	115

.OR.

Q.II. x) Write a short note on 'Questionnaire'

y) Given below is the wage distribution of 100 workers .Find the mean and standard deviation .

Wages in Rs.	100-200	200-300	300-400	400-500	400 - 450	450 – 500
No. of workers	11	15	27	25	18	4

z) The following table gives the prices of vegetables in the two years 2010 and 2015. Find the index numbers using:
i) Simple aggregative method.   ii) Simple average of relative method.

Vegetable	Price (Rs) per Kg.	
	2010	2015
Tomatoes	14	28
Green Peas	15	60
Beet roots	16	24
Cauliflower	17	51
Onions	20	10

Q.3.a) Differentiate between absolute and Relative measures of variation.

b) The table below gives the frequency distribution of apples.

Weight in gms	110-120	120-130	130-140	140-150	150-160	160-170
Frequency	8	11	12	8	5	6

Find the lightest weight of the heaviest 40 % of the apples.

c) 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?

.OR.

Q.III.x) Write short note on 'Range'.

y) Find Coefficient of Mean deviation from mean for the following data:

5,   6,   7,   8,   9,   10

z) Daily Collection (in Rs) made at a shopping complex is as follows:

25374,	38910,	34165,	31540,	34176,	30059,
32018,	20532,	27876,	28545,	29713,	27657,
22335,	24481,	28579.			

Prepare a frequency table for the above data taking class–intervals of Width 4000 with upper class boundary for the first class daily collection interval as 24000. Also find the Relative and percentage frequency. which class – interval has the lowest frequency?

Q.4.a) What is central tendency? What are the measures of Central Tendency?

b) The following are the number of man-days lost in industrial disputes from 2011 to 2017. Fit a trend line and find the number of Man-days lost in the year 2018.

Year	2011	2012	2013	2014	2015	2016	2017
Man-day (in lakhs)	160	180	100	90	85	95	60

c) Draw less than ogive and obtain median from the following distribution.

Class mark	12	16	20	24	28	32
Frequency	4	10	17	15	9	5

.OR.

Q.IV.x) Write an appropriate word in the following:
i) The difference between Maximum value and Minimum value.
ii) The most appropriate central tendency value for open ended class intervals.
iii) Characteristics that cannot be assigned numerical values.

y) Estimate the trend line by method of second degree curve for the following data:

Year	2002	2003	2004	2005	2006
Sales (Rs. Lakhs)	70	74	80	86	90

z) Represent the following data by a pie diagram.

Newspaper	% of Readers
Navhind Times	27
Herald	23
Tarun bharat	19
Gomantak	13
Navaprabha	10
Sunaparant	8

Q.5.a) Explain in brief, any two components of Time series.

b) An analysis of the monthly wages paid to the workers in two firms belonging to the same management, gives the following results:

Firm	Number of wage earners	Mean wage (in Rs)	Variance of distribution of wages (in Rs.)
A	400	450	100
B	600	500	144

i) Which firm pays larger amount as monthly wages?

ii) Which firm has greater variability in individual wages?

iii) What is the mean monthly wage of all the workers taken together?

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	25	235
Clothing	24	210
Fuel and lighting	15	190
House Rent	18	193
Miscellaneous	20	165

.OR.

Q.V.x) Write a short note on Cyclical Component of Time series.

y) 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

z) Calculate P_p, L_p and F_p from the following data:

Commodity	Sales		Price (in '0000 Rs.)	
	2004	2005	2004	2005
A	20	15	54	56
B	40	45	38	40
C	35	35	45	48
D	50	60	40	45

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