

SARASWAT EDUCATION SOCIETY'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 2023
SEMESTER III

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

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.

Q.1.a) What are the methods use for estimation of trend values in time series?

b) Find standard deviation and coefficient of variance from the following data.

12 14 13 18 15 16 16 12 18

c) Change the following Fixed base index number to Chain based index number.

Year	2000	2001	2002	2003	2004	2005
I.N.based 2000	100	110	117	135	140	145

.OR.

Q.I.x) Write an appropriate word in the following:

- i) Characteristics that cannot be assigned numerical value.
- ii) Midpoint of a class interval.
- iii) Formula use to determine the number of classes in frequency distribution.

y) Calculate mean deviation from median for the following data:

Class interval	2-4	4-6	6-8	8-10
Frequency	3	5	7	9

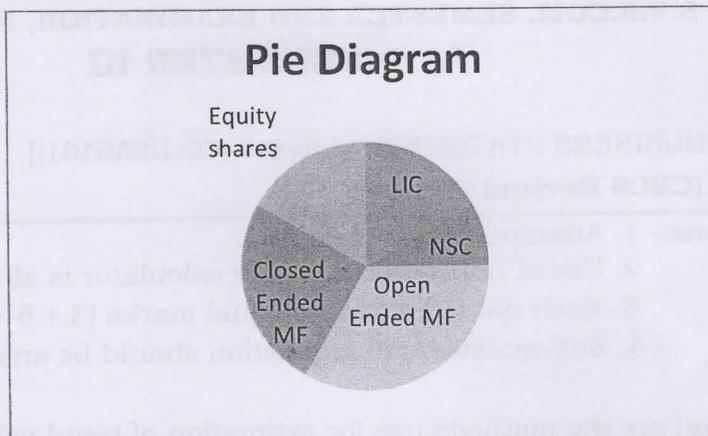
z) Splice the following two index number series:

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Series A	100	120	135	160	170				
Series B					100	105	110	107	115

Q.2.a) State functions of statistics.

b) Pie diagram is drawn for the following data. Answer the questions that follow

Investment avenues	LIC	NSC	Open ended MF	Closed ended MF	Equity shares
Frequency	50,000	25,000	1,00,000	75,000	50,000



- What is the percentage of Equity shares and NSC avenues together?
- What is the share of Open ended MF in the given data?
- How much Equity shares and LIC contribute?

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.II.x) Differentiate between:

- Sample survey and Census survey.
- Statistics and Parameter.

y) Draw the Histogram and find the modal value for the following data:

Class intervals	0-10	10-20	20-30	30-40	40-50
Frequency	6	11	15	8	3

z) The table below gives salary of workers in Rs. '000.

Salary('000)	3 - 5	5 - 7	7 - 9	9 - 11	11 - 13	13 - 15
No. of workers	30	16	19	20	10	5

Calculate the average salary. How many of them are drawing highest salary.

Q.3.a) What do you understand by 'graph'? What are the different types of graphs?

- 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 monthly wage (in Rs)	Variance of distribution of wages
A	76	355	5.0
B	24	370	4.0

- 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) 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

.OR.

- Q.III.x) What do you understand by 'Diagram'? List the different types of diagrams?

- y) Find coefficient of Quartile Deviation from the following data.

Salary in thousands	0 - 6	6 - 12	12 - 18	18 - 24	24 - 30
No. of worker	12	10	13	10	14

- z) 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.

- Q.4.a) Write a short note on 'Survey'

- b) Weights of workers in 'XXI' unit are recorded as follows.

Weight in Kgm	20-30	30-40	40-50	50-60	60-70	70-80
No. of workers	10	15	15	30	20	10

Calculate: i) the third quartile ii) the first decile iii) the weight of 51st worker.

- c) The following table gives the prices of vegetables in the two years 2007 and 2008. Taking 2007 as a base year, find the index numbers using:

- i) Simple aggregative method.
 ii) Simple average of relative method.

Vegetable	Price (Rs) per Kg.	
	2007	2008
Tomatoes	14	28
Green Peas	15	60
Beet roots	16	24
Cauliflower	17	51
Onions	20	10

.OR.

- Q.IV.x) What are Inclusive type of class intervals? When do we use it?

y) Prepare a frequency table for the following data taking class-limits of exclusive type and a class interval of 3 units beginning with first class interval as 8-11.

15 17 23 14 13 19 15 17 15 12 16 18
21 15 20 12 09 14 17 16 15 13 22 20

Which class-interval has the highest frequency?

z) Calculate Value index number and Fisher's index number from the following data

Commodity	Base year		Current year	
	Price	Quantity	Price	Quantity
A	20	18	15	2
B	50	2	40	0.5
C	60	4	50	9
D	70	12	60	3

Q.5.a) Write down the formula for Harmonic mean. Find HM of 3 and 5.

b) The following are the cost of living index numbers. Find out the trend values assuming five yearly cycle.

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003
Cost of living index number	100	110	120	150	125	120	118	110	140

c) Calculate Karl Pearson's coefficient of Skewness from the following data.

x	1	2	3	4
f	1	3	4	2

.OR.

Q.V.x) Write short note on Skewness.

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

Year	2001	2002	2003	2004	2005	2006	2007	2008
Price index	110	115	116	118	119	120	122	124

z) Use Bowley's formula to find the coefficient of Skewness from the following :

x	1	2	3	4	5
f	2	3	5	3	2

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