

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN  
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)  
Chromepet, Chennai — 600 044.

B.Com.(BIM) END SEMESTER EXAMINATIONS NOVEMBER -2023  
SEMESTER - I

**21UBBAT1001 - Business Statistics**

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

**Section B**

Answer any **SIX** questions ( $6 \times 5 = 30$  Marks)

- What are the rules for constructing diagrams?
- Calculate the co-efficient of correlation from the following data by the spearman's rank difference method

Price of tea	75	88	95	70	60	80	81	50
Price of coffee	120	134	150	115	110	140	142	100

- Estimate the trend values using the data given by taking a four-yearly moving average

Year	1996	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09
values	12	25	39	54	70	87	105	100	82	65	49	34	20	7

- An enquiry into the budget of middle class families in Mumbai gave the following information.

Expenses	Weight	Price	
		2013	2014
Food	35%	2500	2850
Rent	15%	2000	2200
Clothing	20%	1400	1498
Fuel	10%	400	500
Miscellaneous	20%	600	960

What changes in the cost of living figure 2014 have taken place compared to 2013?

- Find the missing frequency from the following data.

Marks	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60
No of students	5	15	20	-	20	10

The arithmetic mean is 34 marks.

- Calculate the karl-pearson's co-efficient of correlation between expenditure and sales

Expenditure	39	65	62	90	82	75	25	98	36	78
Sales	47	53	58	86	62	68	60	91	51	84

**Contd...**

7. From the data given below. Calculate seasonal indices for I, II, III, IV Quarters assuming the trend is absent.

Quarter	Year				
	2010	2011	2012	2013	2014
I	40	42	41	45	44
II	35	37	35	36	38
III	38	39	38	36	38
IV	40	38	40	41	42

8. Calculate Fisher's Ideal Index from the following data and prove that it satisfies Time Reversal Test.

Commodity	2010		2011	
	Price	Expenditure	Price	Expenditure
A	8	80	10	120
B	10	120	12	96
C	5	40	5	50
D	4	56	3	60
E	20	100	25	150

### Section C

Answer any **THREE** questions ( $3 \times 10 = 30$  Marks)

9. Briefly explain about Collection and Tabulation of Statistical Data.
10. Find the standard deviation from the following data
- |                |         |         |         |         |         |         |
|----------------|---------|---------|---------|---------|---------|---------|
| Age            | 20 - 25 | 25 - 30 | 30 - 35 | 35 - 40 | 40 - 45 | 45 - 50 |
| No. of persons | 170     | 110     | 80      | 45      | 40      | 35      |
11. Construct the line of regression of y on x.
- |   |   |   |    |    |    |    |    |
|---|---|---|----|----|----|----|----|
| x | 1 | 2 | 3  | 4  | 5  | 8  | 10 |
| y | 9 | 8 | 10 | 12 | 14 | 16 | 15 |
12. Fit a straight line trend for the following data. Estimate the value for 2000
- |                        |      |      |      |      |      |      |      |
|------------------------|------|------|------|------|------|------|------|
| Year                   | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| Production (m. tonnes) | 60   | 72   | 75   | 65   | 80   | 85   | 95   |
13. Construct index number of price from the following data by applying
- Laspeyre's method
  - Paasche's method
  - Bowley method
  - Fisher's ideal method
  - Marshall-Edgeworth method

**SEMESTER - I**  
**21UBBAT1001 - Business Statistics**

Commodity	2010		2011	
	Price	Quantity	Price	Quantity
A	20	8	40	6
B	50	10	60	5
C	40	15	50	15
D	20	20	20	25

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