

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.B.A. - END SEMESTER EXAMINATIONS - NOVEMBER 2025

SEMESTER - IV

**20UBACT4009 - Business Statistics - II**

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

### Section B

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

1. Fit a trend line to the following data by the method of semi-averages:

Year	2012	2013	2014	2015	2016	2017	2018
Sales (000' units)	102	105	114	110	108	116	112

2. Construct the cost of living index numbers from the table given below

S.No.	Group	Index for 1985	Expenditure
1.	Food	1100	46%
2.	Clothing	430	10%
3.	Fuel and Lighting	440	7%
4.	House Rent	300	12%
5.	Miscellaneous	550	25%

3. Write the procedure for testing of hypothesis.

4. 200 digits are chosen at random from a set of tables. The frequencies of digits are as follows.

Digit	0	1	2	3	4	5	6	7	8	9
Frequency	18	19	23	21	16	25	22	20	21	15

Find whether the digits were distributed in equal numbers in the tables from which they were chosen.

5. Using the following data, show that Fisher's Ideal formula satisfies the Factor Reversal Test:

Commodity	Price Per Unit (Rs.)		Number of Units	
	Base Period	Current Period	Base Period	Current Period
A	6	10	50	56
B	2	2	100	120
C	4	6	60	60
D	10	12	30	24
E	8	12	40	36

Contd...

6. The following table gives the yields of 15 samples of plot under three varieties of seed

A	B	C
20	18	25
21	20	28
23	17	22
16	15	28
20	25	32

Test using Analysis of Variance whether there is a significant difference in the average yield of seeds.

7. Using three year moving average determines the trend and short term fluctuations.

Year	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Production in tonnes	21	22	23	25	24	22	25	26	27	26

8. Write the procedure for one way Analysis of Variance.

### Section C

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

9. Fit a straight line trend for the following data by the method of least squares.

Year	1996	1997	1998	1999	2000	2001
Production	7	9	12	15	18	23

10. Construct the index numbers of price from the following data by applying

- Laspeyre's Method
- Paasche's Method
- Bowley's Method
- Fisher's Ideal Method

Commodities	1984		1985	
	Price	Quantity	Price	Quantity
A	04	08	08	06
B	10	10	12	05
C	08	14	10	10
D	04	19	04	13

11. Explain the types of sampling.

Contd...

12. The following table shows the distribution of digits in numbers chosen at random from a telephone directory:

<b>Digit</b>	0	1	2	3	4	5	6	7	8	9
<b>Frequency</b>	1026	1107	997	966	1075	933	1107	972	964	853

Test whether the digits may be taken to occur equally frequently in the directory.

13. Perform a two-way ANOVA on the data given below:

		<b>Treatment I</b>		
		i	ii	iii
<b>Treatment II</b>	i.	30	26	38
	ii.	24	29	28
	iii.	33	24	35
	iv.	36	31	30
	v.	27	35	33

Use the coding method, subtracting 30 from the given numbers.

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