

**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.

BBA. END SEMESTER EXAMINATIONS APRIL - 2022

SEMESTER - IV

20UBACT4009 - Business Statistics - II

Total Duration : 3 Hrs.

Total Marks : 60

Section A

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

1. From the following data calculate the four year moving average and determine the trend values. Find the short term fluctuations.

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Value	50.0	36.5	43.0	44.5	38.9	38.1	32.6	41.7	41.1	33.8

2. Compute the cost of living index number from the following data:

Commodity	Rice	Wheat	Pulses	Oil	Milk
2011 (Price in Rs.)	30	8	14	22	25
2012 (Price in Rs.)	47	12	18	15	30
Weight	4	2	3	2	1

3. Describe the procedure for Testing of Hypothesis.
4. A company keeps records of accidents. During a recent safety review, a random sample of 60 accidents was selected and classified by day of the week on which they occurred.

Day	MON	TUE	WED	THU	FRI
No. of Accidents	8	12	9	14	17

Test whether there is any evidence that accidents are more likely on some days than others. (Table Value of χ^2 for 4 df at 5% level = 9.488)

5. 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 significance difference in the average yield of seeds. (Table Value at 5% level = 3.89)

Contd...

6. Calculate the Index Number for the year 2005 using the following methods:

a) Laspeyre's Method b) Paasche's Method

	2004		2005	
Commodity	Price	Quantity	Price	Quantity
A	8	10	10	9
B	10	12	15	12
C	12	8	18	7
D	15	6	16	8

7. Assuming that trend is absent, determine if there is any seasonality in the data given below:

	Quarters			
Year	1 st	2 nd	3 rd	4 th
2011	72	68	80	70
2012	76	70	82	74
2013	74	66	84	80
2014	76	74	84	78
2015	78	74	86	82

What are the indices for various quarters?

8. Write a note on sampling and non-sampling error.

Section B

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

9. Classify the types of Sampling.

10. Given below are the figures of production (tonnes) of a sugar factory:

Year	2001	2001	2002	2003	2004	2005	2006
Production	77	88	94	85	91	98	90

- Fit a straight line by 'Least Square' Method and tabulate the trend values.
- What would be the predicted production for the year 2009?
- What is the monthly increase in the production of Sugar?

11. Using the following data, Construct Fisher ideal Index and Show how it satisfies Time Reversal Test and Factor Reversal Test?

	2018		2019	
Commodity	Price	Qty.	Price	Qty.
A	6	50	10	56
B	2	100	2	120
C	4	60	6	60
D	10	50	12	24
E	8	40	12	36

Contd...

12. The following data is collected on two characteristics:

	Smokers	Non Smokers
Literate	83	57
Illiterate	45	68

Based on this you can say that there is no relation between the habit of smoking and literacy.

13. Set up ANOVA Table for the following per hectare yield for three varieties of wheat, each grown in four plots.

	Variety of wheat's		
Plots of Lands	A1	A2	A3
1	6	5	5
2	7	5	4
3	3	3	3
4	8	7	4

Also work out F- ratio and test whether there is significant difference among the average yields in the 3 varieties of wheat. (Table Value of F at 5% level = 4.26)
