

**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 EXAMINATION APRIL/NOV - 2021

SEMESTER - V

18UBACT5012 - Business Statistics - II

Total Duration : 3 Hrs	Total Marks : 75
MCQ : 30 Mins	MCQ : 15
Descriptive : 2 Hrs.30 Mins	Descriptive : 60

Section B

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

1. Define Time series. Mention the uses and components of Time series.
2. Calculate three yearly moving averages of the following data:

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
No.Of Students	15	18	17	20	23	25	29	33	36	40

3. Construct an index number for 2006 taking 2005 as base.

Commodity	Price in 2005	Price in 2006
A	90	95
B	40	60
C	90	110
D	30	35

4. Compute a price index for the following by a) simple aggregate and b) average of price relative method by using both arithmetic mean and geometric mean:

Commodity	A	B	C	D	E	F
Price in 2005 (Rs.)	20	30	10	25	40	50
Price in 2006 (Rs.)	25	30	15	35	45	55

5. A coin was tossed 400 times and the head turned up 216 times. Test the hypothesis that the coin is unbiased.
6. In 324 throws of a six-faced dice, odd points appeared 180 times. Would you say that the dice is fair at 5 per cent level of significance?
7. The number of defects per unit in a sample of 330 units of a manufactured product was found as follows:

Number of defects	0	1	2	3	4
Number of units	214	92	20	3	1

Fit a Poisson distribution to the data and test for goodness of fit.

Condt...

8. To assess the significance of possible variation in performance in a certain test between the convent schools of a city, a common test was given to a number of students taken at random from the senior fifth class of each of the four schools concerned. The results are given below. Make an analysis of variance of data.(Only Variance between samples required)

Schools			
A	B	C	D
8	12	18	13
10	11	12	9
12	9	16	12
8	14	6	16
7	4	8	15

Section C

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

9. Calculate trend values by the method of least square from the data given below and estimate the sales for 2010.

Year	2003	2004	2005	2006	2007
Sales of Co. A, (Rs.)	70	74	80	86	90

10. Compute Index Number, using Fishers Ideal formula and show that it satisfies time-reversal test and factor-reversal test.

Items	Quantity	Base year price	Quantity	Current year price
A	12	10	15	12
B	15	7	20	5
C	24	5	20	9
D	5	16	5	14

11. 500 apples are taken at random from a large basket and 50 are found to be bad. Estimate the proportion of bad apples in the basket and assign limits within which the percentage most probably lies.
12. In an anti malarial campaign in a certain area, quinine was administered to 812 persons out of a total population of 3,248. The number of fever cases is shown below:

Treatment	Fever	No fever	Total
Quinine	20	792	812
No quinine	220	2,216	2,436
Total	240	3,008	3,248

Discuss the usefulness of quinine in checking malaria.(Use Chi-square test)

Contd...

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13. Find mean profits of the following data:

Profits per shop Rs.	100-200	200-300	300-400	400-500	500-600	600-700	700-800
Number of shops	10	18	20	26	30	28	18