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.(CS) END SEMESTER EXAMINATIONS APRIL-2023
SEMESTER - IV
21UBCCT4012 - Statistics - II

Total Duration : 2 Hrs 30 Mins. Total Marks : 60

Section B

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

1. Using least square method, explain fiting a straight line of the form Y = a + b X.

2. From the following data, compute the coefficient of correlation (r) between X and Y:

X	3	6	5	4	4	6	7	5
Y	3	2	3	5	3	6	6	4

3. Compute Rank correlation from the following data.

X	1	2	3	4	5	6	7	8	9	10
Y	9	8	10	7	5	6	1	2	3	4

4. Explain the components of time series.

5. Compute the 5 yearly moving average from the following data.

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
No. of students	705	685	703	687	705	689	715	685	725	730

6. Compute index numbers of the price from the following data by applying:
   a) Bowley's Method
   b) Paasche's Method

Commodity	**2015**		**2016**	
	Price	**Quantity**	**Price**	**Quantity**
A	2	8	4	6
B	5	10	6	5
C	4	14	5	10
D	2	19	2	13

7. Compute an index number for 2007 taking 2006 as a base

Commodities	**Price in 2006**	**Price in 2007**
A	80	90
B	100	115
C	90	95
D	70	80

Contd...

8. From the following data test if the difference between the variance is significant at 5% level of significance.

Sum of squares of squares of durations from the mean	84.4	102.6
Size	8	10
Sample	A	B

Section C

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

9. Fit a straight line and estimate the likely production for the year 2010.

Year	2002	2003	2004	2005	2006	2007
Production (in tonnes)	24	25	29	26	22	24

10. Compute both the regression equations and estimate X if Y = 75.

X	60	63	66	69	72	78	81	90	96	99
Y	85	87	84	80	82	79	78	73	70	72

11. Examine the moving average and Least square methods of measuring trend.

12. Compute (a) Laspeyre's (b) Paasches's and (c) Fisher's index numbers.

Items	**Price**		**Quantity**	
	Base year	**Current year**	**Base year**	**Current year**
A	6	10	50	50
B	2	2	100	120
C	40	6	60	60
D	10	12	30	25

13. The heights of 10 children selected a random from an area had a mean of 63.2 cm and variance 0.25 cm. Test at 5% level of significance, the hypothesis that the children of the area are on the average less than 65 cm in all.

*****

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.(CS) END SEMESTER EXAMINATIONS APRIL-2023
SEMESTER - IV
21UBCCT4012 - Statistics - II

Total Duration : 2 Hrs 30 Mins. Total Marks : 60

Section B

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

1. Using least square method, explain fiting a straight line of the form Y = a + b X.

2. From the following data, compute the coefficient of correlation (r) between X and Y:

X	3	6	5	4	4	6	7	5
Y	3	2	3	5	3	6	6	4

3. Compute Rank correlation from the following data.

X	1	2	3	4	5	6	7	8	9	10
Y	9	8	10	7	5	6	1	2	3	4

4. Explain the components of time series.

5. Compute the 5 yearly moving average from the following data.

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
No. of students	705	685	703	687	705	689	715	685	725	730

6. Compute index numbers of the price from the following data by applying:
   a) Bowley's Method
   b) Paasche's Method

Commodity	**2015**		**2016**	
	Price	**Quantity**	**Price**	**Quantity**
A	2	8	4	6
B	5	10	6	5
C	4	14	5	10
D	2	19	2	13

7. Compute an index number for 2007 taking 2006 as a base

Commodities	**Price in 2006**	**Price in 2007**
A	80	90
B	100	115
C	90	95
D	70	80

Contd...

8. From the following data test if the difference between the variance is significant at 5% level of significance.

Sum of squares of squares of durations from the mean	84.4	102.6
Size	8	10
Sample	A	B

Section C

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

9. Fit a straight line and estimate the likely production for the year 2010.

Year	2002	2003	2004	2005	2006	2007
Production (in tonnes)	24	25	29	26	22	24

10. Compute both the regression equations and estimate X if Y = 75.

X	60	63	66	69	72	78	81	90	96	99
Y	85	87	84	80	82	79	78	73	70	72

11. Examine the moving average and Least square methods of measuring trend.

12. Compute (a) Laspeyre's (b) Paasches's and (c) Fisher's index numbers.

Items	**Price**		**Quantity**	
	Base year	**Current year**	**Base year**	**Current year**
A	6	10	50	50
B	2	2	100	120
C	40	6	60	60
D	10	12	30	25

13. The heights of 10 children selected a random from an area had a mean of 63.2 cm and variance 0.25 cm. Test at 5% level of significance, the hypothesis that the children of the area are on the average less than 65 cm in all.

*****