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.(Hons) - END SEMESTER EXAMINATIONS NOVEMBER - 2023
SEMESTER - I
20UBHCT1003 - Business Statistics

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

Section B

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

1. Define statistics and discuss its scope.

2. Compute the Median for the following frequency.

Marks	No. of Students
5-10	7
10-15	15
15-20	24
20-25	31
25-30	42
30-35	30
35-40	26
40-45	15
45-50	10

3. In a survey of 200 boys, of which 75 were intelligent, 40 had educated fathers; while 85 of the unintelligent boys had uneducated fathers. Do these figures support the hypothesis that educated fathers have intelligent boys? Use Chi Square test, value of Chi Square for 1 degree of freedom at 5% level is 3.84.

4. An I.Q test was administered to 5 persons before and after they were trained. The results are given below:

Candidates	I	II	III	IV	V
I.Q before training	110	120	123	132	125
I.Q after training	120	118	125	136	121

Test whether there is any change in I.Q. after the training programme.(For v=4, t0.01=4.6)

5. Explain the various types of sampling.

6. Calculate the coefficient of correlation from the following data by the Spearman's Rank correlation method.

Price of Tea (Rs.)	75	88	95	70	60	80	81	50
Price of Coffee (Rs.)	120	134	150	115	110	140	142	100

7. In a partially destroyed laboratory record of an analysis of correlation data the following results only are legible

   Variance of X = 9

   Regression equations 8X-10Y+66=0

   40X-18Y=214

   Find on the basis of the above information

   (a) The mean values of X and Y

   (b) Coefficient of correlation between X and Y, and

   (c) Standard Deviation of Y

8. Fit a straight line trend for the following series. Estimate the value for 2012.

Year	2001	2002	2003	2004	2005	2006	2007
Production of Steel (In tons)	60	72	75	65	80	85	95

Section C

I - Answer any **TWO** questions $(2 \times 10 = 20$ Marks)

9. Calculate Coefficient of Q.D and Bowley's Coefficient of Skewness from the data given below

Profits (Rs.Lakhs)	Less than 10	< 20	< 30	< 40	< 50	< 60	< 70
No.of Companies	8	20	40	50	56	59	60

10. Explain the procedure of Testing and formulation of Hypothesis.

11. To study the performance of three detergents and three different water temperatures, the following 'Whiteness' readings were obtained with specially designed equipment:

Water Temperature	Detergent A	Detergent B	Detergent C
Cold water	57	55	67
Warm water	49	52	68
Hot water	54	46	58

   Perform a two-way analysis of variance, using 5% level of significant (Given F5%=6.94)

12. Calculate Karl Pearson's coefficient of correlation for the data given below.

X	60	62	64	66	68	70	72
Y	61	63	63	63	64	65	67

II - Compulsory question $(1 \times 10 = 10$ Marks)

13. Calculate the Seasonal Index from the following data using the average method

Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
2003	72	68	80	70
2004	76	70	82	74
2005	74	66	84	80
2006	76	74	84	78
2007	78	74	86	82

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