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.(ISM) END SEMESTER EXAMINATIONS APRIL-2023
SEMESTER - III

20UBIAT3003 - Business Mathematics and Statistics - I

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

Section B

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

1. Sketch the origin and history of Set Operations.
2. Let A and B be two finite sets such that n(A) = 20, n(B) = 28 and n(A ∪ B) = 36, find n(A ∩ B).
3. A TV was bought for Rs.21,000. The value of the TV was depreciated by 5% per annum. Find the value of the TV after 3 years.(Depreciation means the reduction of value due to use and age of the item)
4. Write a note on (i) True Discount; (ii) Banker's Gain; (iii) Face Value of Bill.
5. What is the median of the following data set?
   32, 6, 21, 10, 8, 11, 12, 36, 17, 16, 15, 18, 40, 24, 21, 23, 24, 24, 29, 16, 32, 31, 10, 30, 35, 32, 18, 39, 12, 20
6. Calculate Standard Deviation for the following date,
   9, 2, 5, 4, 12, 7, 8, 11, 9, 3, 7, 4, 12, 5, 4, 10, 9, 6, 9, 4.
7. Calculate the rank correlation co-efficient between 'X' and 'Y' variables.

X	10	20	35	14	18	21	16
Y	15	25	18	19	20	26	27

8. Differentiate between correlation and regression.

Section C

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

9. In a competition, a school awarded medals in different categories. 36 medals in dance, 12 medals in dramatics and 18 medals in music. If these medals went to a total of 45 persons and only 4 persons got medals in all the three categories, how many received medals in exactly two of these categories?
10. Find the present value, true discount, banker's discount and banker's gain on a bill of 1,04,500 due in 9 months at 6% per annum.

Contd...

11. Consider the following frequency distribution. Calculate the mean weight of students.

Weight (in kg)	Number of Students
31-35	9
36–40	6
41-45	15
46-50	3
51-55	1
56-60	2
61-65	2
66-70	1
71-75	1

12. P(X) is the probability density, with X being a discrete random variable. Find the standard deviation of X.

X	1	2	3
P(X)	0.3	0.6	0.1

13. Calculate the regression coefficient and obtain the lines of regression for the following data.

X	1	2	3	4	5	6	7
Y	9	8	10	12	11	13	14

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