

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 EXAMINATION APRIL/NOV - 2021

SEMESTER - III

20UBIAT3003 -Business Mathematics and Statistics - I

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. What is a set? Briefly explain the different types of sets.
2. If $A = 1, 3, 5$ $B = 2, 4, 6, 8$ and $C = 2, 5, 8, 10$. Find out the value and also state the type of set for (i) $(A \cup B) \cap (A \cup C)$; (ii) $(A \cup B \cup C)$ and (iii) $(A \cap B \cap C)$.
3. What principal invested at 4% for 5 years will amount to Rs.1200?
4. The following distribution is extracted from a textile shop:

Deepawali Sale (in Rs.100's)	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of Customers Purchased	4	7	15	11	6	9	4	3

You are requested to determine the model class and calculate the most repeated sales during this Deepawali festival (Post COVID'19 Pandemic Period).

5. Explain the procedures for collecting data through schedule and questionnaire.
6. Two samples of size 40 and 60 have Rs.25,000 and Rs.30,000 as their respective mean values. If their standard deviations are Rs.4,000 and Rs.5,000 respectively, find the mean and standard deviation of the combined group of size 100.
7. The following data is provided by the store manager and requested you to calculate variance and standard deviation for the raw materials procurements for this year:

Price of Raw Materials per unit (In Rs.'000s)	10	20	30	40	50	60	70	80	90
Materials purchased (Quantity)	4	4	6	9	12	3	5	20	3

Contd...

8. The rank of service and efficiency are stated below:

Staff ID No.	101	102	103	104	105	106	107	108	109	110
Ranking according to length of service	1	2	3	4	5	6	7	8	9	10
Ranking according to efficiency	4	3	2	8	5	9	7	10	1	6

State whether rank of service and rank of efficiency for 10 staffs of a company is correlated.

Section C

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

9. Explain the various relations and functions of Sets.
10. The difference between simple and compound interest on a certain sum for 3 years at 5% p.a. is Rs.228.75. Find the compound interest on the sum for two years at 5%.
11. Calculate harmonic mean and geometric mean from the data given below:

x	5	12	17	20	25	30
f	3	2	5	9	5	2

12. From the following data obtain two regression equations:

S	6	9	12	5	8	14
T	5	20	15	12	9	11

13. Compute quartile deviation (in Amount) for the following data:

Purchases (In Rs.'000s)	0-10	10-20	20-30	30-40	40-50	50-60
No. of Suppliers	3	2	5	9	5	2