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.Sc. END SEMESTER EXAMINATIONS NOVEMBER-2022
SEMESTER - III
20UCSAT3003 - Statistical Methods and its Applications I

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

Section A

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

1. Explain the Scope and Limitation of Statistics.

2. The following is the age distribution of 100 persons in a street. Calculate the Arithmetic Mean

Age group	$0-10$	$10-20$	$20-30$	$30-40$	$40-50$	$50-60$
Number of Persons	5	10	25	30	20	10

3. Calculate Mean Deviation about the Mean for the following data:

Value (x)	10	11	12	13	14
Frequency	3	12	18	12	3

4. The weekly salaries of a group of employees are given in the following table. Find the Mean and Standard Deviation of the salaries.

Salary (in Rs)	75	80	85	90	95	100
Number of Persons	3	7	18	12	6	4

5. State and Prove Multiplication Theorem for two events.

6. A bag contains 4 white and 2 black balls. Another bag contains 3 white and 5 black balls. If one ball is drawn from each bag. Find the probability that
   (a) both are white
   (b) both are black
   (c) one is white and one is black

7. Derive the MGF of Poisson Distribution

8. Fit a Poisson Distribution to the following data:

X	0	1	2	3	4
Frequency	109	65	22	3	1

Section B

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

9. Explain the various diagram and graph used for representation of statistical data.

Contd...

10. Draw Ogive Curves for the data given below

Draw sales (Rs.000)	10–20	20–30	30–40	40–50	50–60	60–70	70–80
Number of Shops	3	6	10	15	8	4	2

11. Calculate Karl Pearson's co-efficient of Skewness for the following data

Class	$0-6$	$6-12$	$12-18$	$18-24$	$24-30$	$30-36$
Frequency	5	12	18	38	20	7

12. State and Prove Baye's Theorem.

13. Derive the MFG of Binomial Distribution. Hence find Mean and Variance.

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