Roll No. | | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 09

M.Sc. (Mathamatics) (Sem.–3)

MATHEMATICAL STATISTICS

Subject Code : UC-MSM-303-18

M.Code : 77286

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION - B & C. have FOUR questions each.**
3. **Attempt any FIVE questions from SECTION B & C carrying EIGHT marks each.**
4. **Select atleast TWO questions from SECTION - B & C.**

SECTION-A

Q1 Write briefly :

(a) Define Conditional probability.

(b) Define Probability density function.

(c) Define Probability generating function.

(d) Define moments.

(e) State joint distributions.

(f) Define discrete distributions.

(g) Define Binomial distributions.

(h) Define Range.

(i) Define Hypotheses.

(j) Explain one way classification.

SECTION-B

Q2 State and prove Bayes theorem.

Q3 The probability mass function p_x of some discrete real-valued random variable X is given by the following table,

(a) Give the missing value $p_x(2)$.

(b) Draw the histogram of p_x.

x	0	1	2	3	4
$p_{x\,(x)}$	0.35	0.15	…	0.1	0.2

Q4 Explain in detail Characteristic function and its elementary properties in detail.

Q5 State and prove Central limit theorem.

SECTION-C

Q6 What are the characteristics of Poisson distribution? Mention three business situations where Poisson model is applicable.

Q7 Why does the Normal distribution occupy the most important position in statistical analysis? Also point out its constraints?

Q8 What is chi-square test? What are the assumptions for test? What type of conclusions you can draw using it? Explain.

Q9 What is the meaning of analysis of variance of data and what are its uses? Explain clearly the technique of analysis of variance of data for a two way classification.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.