B.Sc. DEGREE EXAMINATION,APRIL 2020
I Year I Semester
Probability and Random Variables

Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. Define Classical probability.
2. State the Boole's inequality.
3. Define about conditional probability for two events.
4. What is meant by independent event?
5. What do you understand by distribution function?
6. What are the properties of probability density function?
7. State the properties of Mathematical expectation.
8. Define conditional variance.
9. What is Cumulant Generating function?
10. State the Uniqueness theorem.
11. Define probability density function.
12. What do you understand by correlation coefficient in Mathematical expectation?

Section B $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. Discuss about random experiment.
14. State and prove multiplication theorem of probability for two events.
15. Explain about marginal distribution functions of X and Y.
16. Discuss about Moment generating function.
17. Explain about conditional Expectation.
18. Elucidate the conditional distribution functions of X - Y=y and Y - X = x
19. Explain convergence in probability.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. State and prove the addition theorem of probability for two events.
21. State and prove: Baye's theorem of probability for n events.
22. State the Measures of location, dispersion, skewness and kurtosis for continuous probability distribution.
23. Prove that the Chebychev's inequality.
24. Elucidate about the convergence in distribution and Weak Law of Large Numbers

B.Sc. DEGREE EXAMINATION,APRIL 2020
I Year I Semester
Probability and Random Variables

Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. Define Classical probability.
2. State the Boole's inequality.
3. Define about conditional probability for two events.
4. What is meant by independent event?
5. What do you understand by distribution function?
6. What are the properties of probability density function?
7. State the properties of Mathematical expectation.
8. Define conditional variance.
9. What is Cumulant Generating function?
10. State the Uniqueness theorem.
11. Define probability density function.
12. What do you understand by correlation coefficient in Mathematical expectation?

Section B $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. Discuss about random experiment.
14. State and prove multiplication theorem of probability for two events.
15. Explain about marginal distribution functions of X and Y.
16. Discuss about Moment generating function.
17. Explain about conditional Expectation.
18. Elucidate the conditional distribution functions of X - Y=y and Y - X = x
19. Explain convergence in probability.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. State and prove the addition theorem of probability for two events.
21. State and prove: Baye's theorem of probability for n events.
22. State the Measures of location, dispersion, skewness and kurtosis for continuous probability distribution.
23. Prove that the Chebychev's inequality.
24. Elucidate about the convergence in distribution and Weak Law of Large Numbers