THREE YEAR B.A./B.Sc DEGREE EXAMINATION
STATISTICS(WM)
(W.E.F 2020-21 ADMITTED BATCH)
SEMESTER – II
PAPER 2: PROBABILITY THEORY AND DISTRIBUTIONS

Time: 3 Hours **Max. Marks : 75**

SECTION – A

Answer any FIVE Questions :- 5 X 5 = 25 M

1. Define (a) Random experiment (b) Sample Space.(c) Events
2. State and Prove Boole's Inequality
3. Define (a) pdf (b) pmf
4. If the pdf of x is $f(x)= x, 0<x<2$ then find E(x), V(x)
5. Define Mathematical Expectation. Mention the Properties.
6. Define mgf, cgf, cf of a Random variable.
7. Define poisson distribution. Find its mean.
8. Define Geometric distribution. Mention the properties.
9. Define Rectangular distribution. Find its mean.
10. Derive additive property of Normal distribution

SECTION – B

Answer any FIVE Questions. **5 X 10 = 50 M**

11. Explain various definitions of Probability
12. State and prove Multiplication theorem of Probability for n events
13. Explain Distribution Function and its properties.
14. Define the Concepts (a)Joint pdf (b) Marginal pdf (c) Conditional pdf (d) Independence of Random variables
15. State and Prove Chebychev's Inequality.
16. State and Prove Multiplication theorem on Mathematical Expectation.
17. Define Bionomial distribution and derive its mean and variance.
18. Derive Poisson distribution as a limiting case of Binomial distribution.
19. Define Normal distribution.Mention the Properties and Importance of Normal distribution.
20. Define Gama distribution, find MGF of Gama distribution.