

Roll No. ....

**D-3702**

**B. Sc. (Part III) EXAMINATION, 2020**

MATHEMATICS

**(Optional)**

Paper Third (C)

**(Application of Mathematics in Finance and Insurance)**

*Time : Three Hours ]*

*[ Maximum Marks : 50*

**Note :** Attempt any *two* parts from each question. All questions carry equal marks.

**Unit—I**

1. (a) Write scope and objectives of Financial Management.
- (b) Explain three important decisions for achievement of wealth maximization.
- (c) Distinguish between an ordinary annuity and an annuity due.

**Unit—II**

2. (a) What is IRR and how to calculate it ?
- (b) How do investors react under uncertainty ? Explain.
- (c) Explain Return-Markowitz model.

**Unit—III**

3. (a) How are duration and convexity of bonds calculated ?
- (b) What are call and put option in financial derivatives ?
- (c) State and prove call and put parity theorem.

**(A-70) P. T. O.**

**[ 2 ]**

**Unit—IV**

4. (a) Explain chances of loss and proximate cause in insurance.
- (b) Mathematically differentiate life insurance and general insurance.
- (c) How is mortality table constructed ? Explain.

**Unit—V**

5. (a) Explain determination of claims for general insurance using Poisson distribution.
- (b) Write properties of compound aggregate claim model.
- (c) Write a note on F-recursive and approximate formulae for F.