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.

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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.

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