

A-2243

B. A. (Part III) EXAMINATION, 2017

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 Unit. All questions carry equal marks.

Unit—I

1. (a) What should be goals of a financial manager ? Describe.
- (b) Explain calculation of present value and future value in discrete case.
- (c) Write short notes on the following :
 - (i) Speculation
 - (ii) Gambling

Unit—II

2. (a) Discuss the benefits of diversification to a portfolio manager.

- (b) Write short notes on the following :

- (i) Sharpe's Single index model
- (ii) Markowitz model

- (c) Explain Risk, types of Risks and difference between risk and uncertainty.

Unit—III

3. (a) Explain bond valuation by Taylor's series.
- (b) State and prove call and put parity theorem.
- (c) Write short notes on the following :
 - (i) Arbitrage
 - (ii) Financial derivatives

Unit—IV

4. (a) Explain fundamentals of Insurance.
- (b) Write an essay on costs and benefits of insurance to the society.
- (c) Write short notes on the following :
 - (i) Mortality tables
 - (ii) Computation of premium of life insurance for the whole life.

Unit—V

5. (a) Explain compound claim model.
- (b) Explain F-recursive and its use in General Insurance.
- (c) Write short notes on the following :
 - (i) Negative Binomial distribution
 - (ii) Poisson distribution

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