Roll No. .....

E–3343

B. A. (Part III) EXAMINATION, 2021

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. Each part carries equal marks.

Unit—I

1. (a) By an example illustrate the difference between risk, speculation and gambling.

   (b) Mr. A has to receive ₹ 5,000 per year for 6 years. Calculate the present value of annuity assuming that he can earn interest on his investment at 12% p. a.

   (c) Critically analyse the function of manager in a large scale industrial establishment.

Unit—II

2. (a) Write a note on measurement of returns under uncertainty situation.

   (b) Explain the Sharpe's single index model.

   (c) Explain relationship between Risk and Return.

Unit—III

3. (a) Explain carefully the difference between writing a put option and buying a call option.

   (b) What do you mean by Swap ? Illustrate by example use of swap to transfer an asset.

   (c) Explain pricing of contingent claims through arbitrage.

Unit—IV

4. (a) What do you mean by Loss ? Write chance of loss, peril and hazard.

   (b) Explain various types of general insurance.

   (c) Would the calculation of premium at age 35 for term to age 100 be the same as the calculation of the net single premium for whole life issued at the same age ? Explain.

Unit—V

5. (a) Explain the method of calculation of a compound claim density function.

(b) How negative Binomial distribution is used to determine claims of General Insurance ?

(c) Write a note on significance of Poisson and Binomial distribution in determination of claims for General Insurance.