(Given Amount of Insurance $2000)

Table of Mortality

Age	Number living at beginning of designated year	Number living during designated year	Yearly Proability of dying
30	90000	12000	0.0012
31	89256	11955	0.0013
32	89100	11935	0.0011
33	88900	11400	0.0014
34	88456	11800	0.0015

Present value of 1 $ at 5% compound Internet.

Number of Year	5%
1	0.9560
2	0.8900
3	0.8512
4	0.8071
5	0.7251

HH-345

Dual Degree B. Sc.(Hons.)/M.Sc. EXAMINATION, May 2018

(Eighth Semester)

(Main & Re-appear)

MATHEMATICS

MAT520H

Mathematics for Finance and Insurance

Time : 3 *Hours*]   [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. Define the terms risk, speculation and gambling. Explain scope and main decisions of financial management. **15**

2. Ramesh borrows Rs. 70,000 for a musical system of a monthly interest of 1.10%. The loan is to be repaid in 15-equal monthly intalments, payable at the end of each month. Wha is the monthly instalment ? Prepare the loan amortisation schedule. **15**

Unit II

3. (a) What do you mean by terms security, uncertainty and portfolio risk ? **7**

(b) Explain Markowitz model with a suitable example. **8**

4. Explain Sharpe's single index model and determine systematic and unsystematic risk.

15

Unit III

5. (a) What do you mean by convexity of bonds ? **5**

(b) Explain all branches and types of insurance. **10**

6. Write a note on costs and benefits of insurance to the society. **15**

Unit IV

7. (a) Determine the amount of claims of a Internal Insurance. **5**

(b) Explain compound claim aggregate model and its properties. **10**

8. Calculate the net single premium for a four year term insurance policy, female at age–30, for below given data/tables.