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M.Sc. ACTUARIAL SCIENCE (MSCAS)
Term-End Examination
June, 2011

MIA-013 F2F : ACTUARIAL RISK
MANAGEMENT - II

Time : 3 hours

Maximum Marks : 100

SECTION - A

There are 7 questions in section A each carries 8 marks. Answer any five.

1. List the factors that can influence a long term investment strategy and that might be taken into account by an institutional investor in making strategic investment decisions. 8

2. (a) Explain the difference between an active and a passive investment management strategy. 3
(b) Under what circumstances might a passive strategy be most appropriate for a particular investor ? 5

3. (a) List the advantage of a : 3
(i) deterministic model
(ii) stochastic model

- (b) List the steps in developing and applying a deterministic model. 5
4. (a) Define the following categories of expenses : 4
 (i) Variable (ii) Fixed
 (iii) Direct (iv) Indirect
- (b) "No expenses are truly fixed". Discuss this statement. 4
5. (a) Define Provisions. 1
 (b) List the reasons for calculating the provisions needed by a Provider. 3
 (c) Outline the factors that will influence the choice of valuation method and assumptions when determining of an insurer's liabilities. 4
6. (a) Outline four options open to a stakeholder when faced with a risk. 4
 (b) State the factors affecting the approach taken to dealing with a risk. 4
7. (a) Describe briefly the reasons for underwriting life insurance proposals. 4
 (b) List reasons why alternative risk transfer contracts may be purchased. 4

SECTION - B

*There are 6 questions in section B each carries 15 marks.
Answer any four of them.*

8. (a) Describe how a stochastic asset-liability Model can be used to assess the long term solvency position of a pension fund. 7
- (b) Redington's theory of immunisation can be used as an alternative to pure matching. Set out the reasons why pure matching is not always possible for a life insurance company and list the limitations of immunisation. 8
9. Outline the main features of each of the following asset classes that are likely to be considered by a large pension scheme : 15
- (a) Cash
- (b) Overseas shares
- (c) index linked bonds
- (d) domestic shares
- (e) domestic fixed interest government bonds.
10. (a) A model is to be developed to price and monitor an insurer's with profit endowment assurance business. Outline the key requirements that the model should satisfy. 12
- (b) List the 11 main uses actuaries make of data. 3

11. (a) List the sources of surplus/deficit in the valuation of a portfolio of motor insurance policies. 8
- (b) Outline briefly two replicating portfolio based market related approaches to valuing a benefit arrangements. 7
12. Define the following terms and give examples of each : 15
- (a) Credit risk (b) Liquidity risk
- (c) Market risk (d) Business risk
- (e) Operational risk (f) External risk
13. (a) State main purposes for which a general insurance company monitors : 7
- (i) claims data
- (ii) expenses.
- (b) Outline how an insurance company could assess the costs and benefits of it's proposed reinsurance arrangements ? 8
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