EXAMINATION

7 April 2005 (pm)

Subject ST2 — Life Insurance Specialist Technical

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. *Enter all the candidate and examination details as requested on the front of your answer booklet.*

2. *You have 15 minutes at the start of the examination in which to read the questions. You are strongly encouraged to use this time for reading only, but notes may be made. You then have three hours to complete the paper.*

3. *You must not start writing your answers in the booklet until instructed to do so by the supervisor.*

4. *Mark allocations are shown in brackets.*

5. *Attempt all 8 questions, beginning your answer to each question on a separate sheet.*

6. *Candidates should show calculations where this is appropriate.*

AT THE END OF THE EXAMINATION

Hand in BOTH your answer booklet, with any additional sheets firmly attached, and this question paper.

In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator.

1 Outline the ways in which the government of a country may use its fiscal regime to increase the consumer demand for savings products of life insurance companies. [4]

2 Describe the key considerations in setting the terms for a without profits policy alteration. [5]

3 A without profits whole life assurance policy with sum assured of £20,000 is to be issued to a male life currently aged 50. The policy has an option such that at the tenth policy anniversary the policyholder may take out a further whole life assurance policy for a sum assured of £20,000, at the company's standard premium rates and without evidence of health.

Benefits are paid at the end of the year of death. Basic premiums are paid annually in advance throughout life, under all policies. The additional premium is payable until the option date, or until earlier death.

The company uses the following basis for calculating premium rates:

Mortality after exercising:	AM92 Ultimate mortality with ten years added to actual age
Standard mortality:	AM92 Select
Interest:	4% per annum
Expenses:	None
Proportion exercising option:	30% of all policyholders

Calculate the additional annual premium that should be paid for the option. [8]

4 Describe how the principal actuarial investigations help to manage risks in a life insurance company. [11]

5 (i) State the principles a life insurance company should follow when establishing supervisory reserves. [3]

A life insurance company sells only conventional with profits life insurance contracts. It uses a net premium method for its statutory valuation.

(ii) Describe the extent to which the net premium method meets the principles for establishing supervisory reserves. [5]

(iii) The value of the assets backing the with profits liabilities has fallen by 25% since the last valuation.

Explain why the statutory value of the liabilities is unlikely to have fallen by the same percentage. [5]
[Total 13]

6 A life insurance company sells unit-linked products through insurance intermediaries.

The government of the country in which the company operates is to introduce new legislation. This will restrict the charges that can be applied to group endowment assurances sold to employers for the purpose of providing retirement benefits for employees.

The maximum charges that can be applied to a policy will be at a fixed rate throughout the policy term, and can be *either*:

(a) x% per annum of the value of the unit-linked fund, and no other charges or penalties; *or*

(b) y% of each premium invested, and no other charges or penalties

An employer is only permitted to have one such endowment assurance policy, but may transfer an existing policy.

The insurance company has decided that it wishes to continue to operate in this market, but its current product offering does not meet the proposed maximum charge regulations.

Discuss the factors that the insurance company should consider when designing its new group endowment assurance product. [17]

7 (i) State the principles of investment that a life insurance company should adhere to when determining its investment strategy. [2]

A life insurance company, which operates in a highly developed economy, has experienced a deteriorating solvency position for a number of years.

Two of the contracts the company writes are:

(a) A unitised with profits single premium pensions contract with a term of 10 years. The contract offers a minimum guaranteed death benefit of the initial single premium plus 2% per annum compound for each complete year the premium was invested. On maturity there is a return of premium paid plus a mixture of regular and terminal bonuses. The terms on surrender prior to the end of the ten year period are not guaranteed.

(b) An immediate annuity contract, where a fixed level amount is paid each month to the annuitant until his/her death. In addition, the life insurance company guarantees to pay an amount equal to five times the annual annuity amount less annuity payments received should the annuitant die within the first five years of taking up the annuity.

Discuss the factors the company might take into account when deciding on the assets it might invest in to meet the investment principles outlined in (i) for the:

(ii) unitised with profits contract [11]

(iii) immediate annuity contract [7]

[Total 20]

8 For a number of years a life insurance company has sold unit-linked savings policies with a term of 10 years.

Premiums in the first two years are invested in “capital” units and after that period are invested in “accumulation” units. Both types of unit have a bid offer spread and an annual management charge. The annual management charge on the capital units is higher than that on the accumulation units.

On death, maturity or surrender the policyholder receives the bid value of units.

The company is using the annual management charge on the capital units as the variable in its profit testing in order to meet its profit criterion.

Over recent years the company has experienced deteriorating solvency.

(i) Discuss how well the charging structure is likely to match the expense cashflows of the company. [12]

(ii) Discuss how the matching might be improved by actuarial funding, describing any changes to the policy design that would be required. [6]

(iii) Discuss how the policy proceeds to the policyholder might change as a result of the changes described in (ii) above. [4]

[Total 22]

END OF PAPER