INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

23 April 2015 (am)

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 six questions, beginning your answer to each question on a new page.*
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 from the approved list.

1 Describe the differences between the product features of the following contracts:

- a regular premium unit-linked savings contract
- a regular premium unitised with profits contract

[8]

2 A life insurance company pays surrender values on without profits whole life contracts by using a prospective method on the original premium basis.

(i) Show that this approach provides the same surrender value as the retrospective method on the original premium basis. [3]

(ii) Explain how profit arises on surrender. [5]
[Total 8]

3 A life insurance company is developing a conventional without profits whole life product. The product has a relatively low maximum sum assured and customers will be accepted without any underwriting.

(i) Discuss the likely target market for this product. [4]

(ii) Discuss the potential method of distribution for this product. [6]

It has been suggested that the policy terms be altered so that the benefit paid on death is the higher of the selected sum assured and the total premiums paid to the date of death.

(iii) Discuss this suggestion. [6]
[Total 16]

4 A life insurance company is pricing a new single premium, unit-linked bond product.

The bond is to have the following features:

- A maturity term of five years.

- A benefit payable on maturity, death or surrender (at any time) equal to 100% of the bid value of the unit fund.

- The charges applied will be a combination of an allocation rate for the single premium, an annual management charge applied as a percentage of the unit fund and a monthly policy fee.

Discuss the factors that the company should consider when determining the charges for this product. [20]

5 A life insurance company sells a single premium unit-linked whole life product.

The key features of the product are:

- The premium is allocated to units using an allocation rate of less than 100%.
- The death benefit is the bid value of units plus a small additional fixed death benefit.
- The surrender value is the bid value of units.
- Partial surrenders can be taken at any time.
- A fixed annual policy fee is taken from the policy via cancellation of units.
- This fee is inflated annually in line with a consumer prices index.
- Policyholders can invest in one or more of a range of unit funds, each of which has a fixed annual management charge which is expressed as a percentage of the fund.
- The annual management charge can vary by fund.
- Policyholders may switch funds at any time, subject to a fixed switch fee.
- The first two switches in any policy year do not incur a switch fee.

The company is about to undertake the supervisory valuation for these contracts.

(i) List the assumptions that are needed in order to calculate the non-unit reserves for these contracts. [4]

(ii) Describe how the non-unit reserves would be calculated. [6]

(iii) Outline the factors that would be considered when setting each of the assumptions for this calculation. [11]
[Total 21]

6 A life insurance company has written conventional term assurance products for a number of years, using medical underwriting at the point of sale.

(i) State reasons why a company would use medical underwriting on term assurances. [5]

The marketing director has proposed that the company should remove all medical underwriting and offer the same terms to all policyholders regardless of their state of health.

(ii) Suggest possible reasons why the marketing director has proposed this. [4]

(iii) Describe the likely implications of this proposal for the approach taken to setting premium rates for the product. [5]

(iv) Describe the possible impact on the risks that the company faces if the proposal was implemented. [9]

(v) Outline the other potential impacts of this proposal on the company. [4]
[Total 27]

END OF PAPER