INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

23 September 2021 (am)

Subject SA2 – Life Insurance

Specialist Advanced

Time allowed: Three hours and twenty minutes

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

If you encounter any issues during the examination please contact the Assessment Team on T. 0044 (0) 1865 268 873.

1 A life insurance company sells without-profits immediate annuities, regular premium Unit-Linked (UL) savings products and level premium term assurances. The UL products have a surrender value and death benefit equal to the unit fund value at the date of claim.

The table below is based on information underlying the Solvency II balance sheet as at 31 December 2019:

	€m
Own funds	150
UL unit Best Estimate Liability (BEL)	500
UL non-unit BEL	(150)
Total UL BEL	350
Immediate annuity BEL	350
Term assurance BEL	50

The company does not invest in derivatives, and it has no reinsurance arrangements in place. The following table summarises the investments held at 31 December 2019:

Own funds, risk margin and other liabilities	50% equities, 25% fixed interest bonds and 25% property
Assets backing UL BEL	100% equities
Assets backing immediate annuity BEL	100% fixed interest bonds with a longer duration than the BEL
Assets backing term assurance BEL	Risk-free fixed interest assets such as government bonds

The company makes use of the volatility adjustment, but not the matching adjustment.

The company calculates its Solvency Capital Requirement (SCR) using the Standard Formula.

(i) List:

- the four most material market risks, and
- the four most material life underwriting risks

that the company is exposed to. [4]

(ii) Propose, with reasons, which direction the risks listed in part (i) are likely to be stressed when calculating the SCR. [10]

Over 2020, a pandemic affected most parts of the world, causing increased deaths, prolonged symptoms and an economic downturn.

By the end of 2020:

- property values had fallen by around 25%.
- equities fell during the year but had recovered back to the position as at the end of 2019. During this time, the company invested in more equities when the values were low.
- risk-free interest rates reduced to almost zero.
- the company had experienced significantly more deaths at all ages across all of its products.
- lapses for the UL business were in line with best estimate assumptions, and lower for the term assurance business.
- a unit pricing error was identified, and action is being taken to rectify the issue.
- new business volumes had fallen to a very low level.

(iii) Determine how the magnitude of the undiversified SCRs for the risks listed in part (i) might have changed over the year. [8]

The regulator has decided to apply a large capital add-on at the end of 2020.

(iv) Suggest possible reasons why the regulator might have made this decision. [7]

Due to the capital add-on, the company is considering moving to an internal model.

(v) Discuss the challenges that the company will face in calibrating the stresses and correlations for the internal model. [5]
[Total 34]

2 A life insurance company writes a range of unitised with-profits life insurance products. It also has a portfolio of conventional with-profits endowments that it no longer sells.

(i) Describe the different types of information that the company provided to with-profits policyholders that might have set policyholder expectations. [3]

The life insurance company is reviewing communications with the with-profits policyholders and has seen a rise in the use of technology in delivering such communications.

(ii) Discuss the advantages to the life insurance company of the increased use of technology to communicate with the with-profits endowment policyholders. [3]

The life insurance company has decided to outsource the administration of the conventional with-profits endowments to an external third-party provider.

(iii) Explain why this may be appropriate for the life insurance company. [4]

Recently, there has been a significant fall in the value of equities in the local equity market.

(iv) Describe the actions that the company may consider to manage its with-profits business in response to this fall. [12]

The life insurance company has decided not to introduce market value reductions on its unitised with-profits business.

(v) Discuss the possible reasons for this decision. [12]
[Total 34]

3 A life insurance company operates in a territory where all products sold by life insurance companies are taxed in a similar way to BLAGAB business in the UK, apart from pensions business, which is taxed on profits.

The government of the territory is aiming to promote the domestic life protection market.

(i) Discuss how the government could use taxation measures to achieve this aim. [9]

(ii) Discuss how the regulator of the territory may use regulation to achieve the government's aim. [9]

The company writes predominantly term assurance business in the territory. However, each year it sells a limited volume of a without-profits single premium fixed term savings product.

(iii) Discuss, from a tax perspective, why the company may only sell a limited volume of this savings product. [4]

The government of the territory has decided that any term assurance policies written from 1 January 2025 will be taxed on a profits basis. Term assurance policies written before this date will continue to fall within the BLAGAB tax calculation.

(iv) Discuss the actions that the company may consider in preparation for this change in taxation basis. [10]

[Total 32]

END OF PAPER