

INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

23 September 2021 (am)

Subject SA1 – Health and Care

Specialist Advanced

Time allowed: Three hours and twenty minutes

<p>In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator.</p>
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If you encounter any issues during the examination please contact the Assessment Team on
T. 0044 (0) 1865 268 873.

- 1 The majority of the population in Country A live on low levels of income, of around \$2 per day. There are no insurance companies established in Country A and no state benefits are provided on ill-health.

Country A has been experiencing high levels of a particular disease. The disease affects around 25% of the population, creating a debilitating illness soon after becoming infected. Without treatment, death is certain to occur within 2 weeks. With treatment, the illness lasts an average of 2 weeks, though some deaths still occur.

Treatment, provided at home, is available to everyone when delivered by community health workers and costs \$10. Alternatively, the same treatment can be provided by a doctor in a hospital for \$1,500.

The treatment has mixed outcomes: 10% die within 2 weeks, 20% have lasting damaging effects on mobility after 2 weeks, and 70% make a full recovery within 2 weeks. Once recovered, most people will have immunity for 5 years.

A group of actuaries is trying to establish the viability of launching a health and care insurance product that will pay out a lump sum on the diagnosis of this disease, which can be used to meet the costs of treatment and other costs associated with the illness.

The actuaries intend to sell the product as a microinsurance health and care product.

- (i) Discuss the suitability of selling the proposed product as a microinsurance product. [4]

It has been decided that a new insurance company will need to be set up in Country A to sell the new product. The group of actuaries has been asked to write a report setting out the factors that need to be considered in setting up the new insurance company and in launching the new product.

- (ii) Outline the factors that should be considered in the report under each of the following areas:
- (a) Product design [3]
 - (b) Product pricing [10]
 - (c) Other areas. [7]

None of the actuaries in the group has experience of working inside Country A, nor do they have experience of microinsurance. They are all members of the Institute and Faculty of Actuaries.

- (iii) State which principle of The Actuaries Code is relevant to this lack of experience. [1]
- (iv) Propose, with reasons, areas of the pricing process where the actuaries may need to seek additional input. [4]

The insurance company has been successfully set up in Country A and the product has proved popular. The insurer is now considering launching other microinsurance health and care products in Country A, namely:

- income protection.
- private medical insurance.
- long-term care.

(v) Assess the suitability of each of these products to microinsurance and to the disease. [6]

[Total 35]

2 A health and care insurance company, Company X, is looking to launch a new product. The product will provide both:

- a fixed cash lump sum
- a regular monthly income

to university students who are diagnosed with any one of a list of medical conditions while they are studying for a university degree. Initial market research of current students and their parents suggests a perceived need for insurance cover:

- for immediate adaptation to facilitate continued presence at university
- to cover the student's living and study costs during any illness.

Benefit payments are triggered on the diagnosis of one of the insured medical conditions. The regular monthly income benefit would be payable in advance until the earlier of the end of the term of the original university degree, the recovery or the death of the student.

- (i) Discuss the factors that Company X would need to consider when designing this product to best meet the students' needs. [12]

The market research suggested that the undergraduate student population has little awareness of household insurer names and has low financial sophistication.

The insurer has approached a national body of student representatives to be a distributor of the product. During the first week of university, when students and parents arrive, these representatives welcome and answer questions on the insurance offering using hand-held internet accessible devices. At this time, sale and payment could be taken by the representative using this device.

- (ii) Assess whether the features of this distribution channel are suitable for the product and target market. [5]

Company X recognises that it will need to focus its attention on sales and that it does not have sufficient in-house expertise to price this product. To address this, it is considering the use of a badging arrangement with an external specialist health and care insurer. Under this arrangement:

- Company X would organise sales and establish a customer base.
- the specialist insurer would undertake pricing, underwriting and the management, payments and administration of claims.

- (iii) Discuss the advantages and disadvantages of the badging arrangement from the perspective of Company X. [6]

Company X is subject to the Solvency II regulatory regime and calculates its Solvency Capital Requirement (SCR) using the standard formula approach.

A Board member of Company X has expressed concerns about the impact of the new product and the proposed badging arrangement on the company's SCR.

- (iv) Discuss the potential implications of launching the new product with a badging arrangement on each of the risk modules of Company X's Solvency II SCR. [9]

[Total 32]

3 Following the widespread outbreak of a new disease in some countries around the globe, an international health promotion body is emphasising the need for countries to provide health coverage:

- to everyone in the population.
- at an affordable cost, so everyone can access healthcare without being pushed into poverty.
- with sufficient availability of services to improve the population's health.

The only healthcare provision in Country B comprises:

A voluntary group cover:

- for employees of private companies
- covering all acute non-cancer conditions and related services
- provided through private insurance companies
- financed through employee deductions to wages after tax

B cash plans:

- for poor, unemployed adults
- covering a few severe medical events only
- provided through charity organisations

C comprehensive medical insurance cover:

- for government staff
- at a cost above the private sector provision
- covering all conditions and all services
- provided by a public insurance arrangement
- financed through employee deductions to wages before tax.

A spokesperson for the government has stated that the current arrangements may increase health inequalities in society. This will particularly be the case given the worsening economic conditions that are expected to follow in those countries affected by the widespread outbreak of the new disease.

(i) Describe how the current arrangements may increase health inequalities in Country B. [3]

The government in Country B has decided that the international body's criteria should be met. A state healthcare provision will be created, delivered and be operating within 18 months' time. The next election is in 12 months' time.

(ii) Describe the objectives the government may be trying to achieve following the outbreak of the new disease. [3]

The government has now decided to extend provision C (the comprehensive medical insurance cover system) to cover all members of the population. The enhanced system will be a 'pay-as-you-go' system funded through general income tax revenue.

- (iii) Describe the stages the government will need to go through to establish the funding of this system. [6]

A leading insurer for provision A (voluntary group cover) has decided to abandon the sale of new group private medical insurance business and replace this by offering group income protection.

- (iv) Outline the changes that will be experienced by each department in the insurance company resulting from this change in the group product offering. [21]
[Total 33]

END OF PAPER