INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

20 September 2023 (am)

Subject SP1 – Health and Care Specialist Principles

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.

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1 In Country X, the insurance regulatory regime had, to date, restricted Income Protection (IP) products such that the product features of all IP products sold in Country X are identical. The insurance regulator in Country X have recently decided to remove this restriction, and health and care insurance companies now have greater freedom when designing IP products.

(i) Suggest possible reasons why the regulator of Country X might have removed this restriction. [4]

Company A is an established health and care insurance company that specialises in individual IP business in Country X. In response to the regulator's decision, Company A's Product Development Director has proposed the following changes to its IP product design as set out in the table below:

Product features	*Regulator's prescribed product features under previous regime*	*Product Development Director's proposed product features*
Deferred period	52 weeks only	Policyholder's choice of 13, 26 or 52 weeks
Replacement ratio	75% of basic (net of tax) income	Policyholder's choice, up to 75% of basic (net of tax) income
Benefit escalation	5% per annum	Linked to Country X's price inflation index

(ii) Discuss the potential advantages and disadvantages of the proposed changes from the perspective of:

- Company A.
- Company A's existing and future policyholders.

[8]

Company A has decided to implement the Product Development Director's proposed amendments to Company A's IP product.

(iii) Describe the process and factors that Company A should consider in arriving at a set of suitable premium rates for the amended IP product. [10]

[Total 22]

2 Company B is a large established health and care insurance company, and a market leader in individual and group Private Medical Insurance (PMI) products. Both products are renewable annually. Over the last two years, Company B has been experiencing a decline in its market share.

(i) Suggest possible reasons for Company B's declining market share in its individual and group PMI business. [8]

As a strategy to regain market share, Company B's Marketing Director has proposed launching a wearable device offer to its individual PMI customers. This offer will provide a wearable device as a gift, to all policyholders who renew an existing or purchase a new individual PMI policy from Company B in the initial year that the offer is launched. In subsequent years, only policyholders who have not previously had a wearable device through Company B will be eligible for the gift offer.

The terms and conditions of this offer stipulates that the wearable device will be used by Company B to track each policyholder's ongoing health via mobile applications to calculate a health score. Each policyholder's health score will be categorised into one of five 'health score' groups ranging from 'very good' to 'very poor'. A new 'health score' rating factor will be introduced, where a corresponding premium loading is assigned to each health score group, as set out in the table below. These premium loadings are based on the results of market research conducted by Company B's marketing team.

Health score	Very good	Good	Average	Poor	Very poor
Premium loading (%)	– 20	–10	0	+10	+20

The premium for each individual policyholder will be calculated as:

$$\text{basic premium} \times (1 + \text{premium loading})$$

where basic premium is based on the existing set of rating factors.

In the initial year that the offer is launched, all existing policyholders will be defaulted to the 'average' rating. New policyholders who refuse the offer will be defaulted to the 'very poor' rating.

(ii) Assess the suitability of the Marketing Director's proposal. [12]

[Total 20]

3 Company C, a large health and care insurance company in Country Y, has been selling Critical Illness (CI) and Income Protection (IP) insurance products for many years. Claims experience has been relatively stable over recent years. Company C invests mainly in government bonds, corporate bonds and cash to back its insurance liabilities, and invests its free assets in local properties and equities.

(i) Suggest possible reasons for Company C's current investment strategy. [5]

(ii) Outline the investment characteristics of direct property as an asset class. [3]

The central bank of Country Y has recently introduced sovereign gold bonds as a new asset class. Sovereign gold bonds are zero-coupon bonds that are a substitute for holding physical gold. Their characteristics are as follows:

- Investment return is achieved through changes in bond price, denominated in grams of gold, which follows the price of gold on the international commodity markets.
- Bonds are bought and sold by trading with the central bank only; there is no authorised secondary market.
- Bonds have no maturity date, but investors must hold bonds for a minimum of 180 days before redeeming them with the central bank.

There are no regulatory restrictions in Country Y on holding this asset class for solvency reporting purposes.

Company C's Finance Director has suggested that the company should consider switching some of its existing assets into sovereign gold bonds.

(iii) Assess the suitability of the Finance Director's suggestion. [8]

(iv) Suggest possible reasons why the company may consider investing in alternative asset types such as those listed below:

- overseas equities
- pooled investment funds
- inflation swaps
- currency swaps.

[5]
[Total 21]

4 Company A is a health and care insurance company specialising in individual and group Private Medical Insurance (PMI) products. The individual PMI product is renewable annually, and policyholders can choose to pay a single premium or monthly premiums. The group PMI product is renewable every two years, and policyholders must pay a single premium at the policy inception/renewal date.

Company A is in the process of preparing financial, policy and claims data (collectively referred to as 'valuation data') for its year-end statutory valuation. Its valuation approach is to use statistical estimation for standard claims, and a case-by-case estimate for large or non-standard claims.

(i) Describe the types of insurance reserve that Company A may hold for statutory reporting purposes. [4]

(ii) Suggest possible causes that could lead to poor-quality valuation data. [5]

(iii) Suggest possible controls that could be put in place to identify and prevent the causes of poor-quality valuation data identified in part (ii). [5]

(iv) Suggest possible consequences of using poor-quality valuation data identified in part (ii) for Company A. [3]

[Total 17]

5 Company B is a health and care insurance company, currently selling only individual and group Income Protection (IP) products in Country X.

(i) Describe how the key risks to which Company B is exposed may differ between an individual and a group IP product. [4]

Country X's economy was severely impacted by a global pandemic in the last two years. Inflation rates in Country X have increased significantly over the last 12 months, having previously been at a historically low and stable level for a number of years.

Economic forecasts indicate that Country X is likely to enter into recession in the next 24 months, with the following consequences:

- Gross domestic product (GDP) to decline by 10%
- Unemployment rates to increase significantly
- Inflation rates to remain high
- Interest rates increased to control inflation.

(ii) Discuss how the forecasted consequences mentioned above may impact the performance of Company B. [8]

(iii) Suggest possible actions that Company B may take to reduce the potential negative impact of these recession consequences on its performance. [8]

[Total 20]

END OF PAPER