INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

5 October 2020 (am)

Subject SP1 – Health and Care Specialist Principles

Time allowed: Three hours and fifteen minutes

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.

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

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1 A health and care insurance company has sold both individual and group Income Protection (IP) products for many years. The products offer a fixed regular income during a period of incapacity due to illness or accident.

The insurer is currently determining the statutory reserves for its IP products.

(i) Outline the different types of reserves the insurer may need to hold for its IP products. [3]

(ii) Describe how each of the reserves identified in (i) could be determined. [10]

[Total 13]

2 A large health and care insurance company has been writing an individual pre-funded Long-Term Care Insurance (LTCI) product for many years. Policyholders pay a regular premium that is reviewable every 5 years. In return, policyholders receive a fixed regular income in the event of sickness or disability, payable for life or until earlier recovery. The policy includes a waiver of the premium while the benefit is being paid.

The next 5-year premium review is now due.

(i) Describe how the insurer would determine the following assumptions for the premium review exercise:

(a) Morbidity

(b) Mortality

(c) Lapses.

[12]

(ii) Outline how random fluctuations could impact the credibility of the insurer's morbidity, mortality and lapse experience. [3]

[Total 15]

3 Company A is a health and care insurance company specialising in individual and group Private Medical Insurance (PMI) business. The assets backing Company A's liabilities currently consist of mainly fixed interest bonds and cash deposits. The Investment Manager has suggested that some of Company A's cash deposits should be used to purchase a private hospital as an investment.

Outline the factors that would be considered before responding to the Investment Manager's suggestion. [11]

4 In a particular country the only benefits provided by the government to citizens are free accident and emergency medical cover. Retirement benefits are provided to employed citizens through occupational pension schemes, which typically also provide lump sum benefits payable on death before retirement. There is a very active private health insurance sector with health insurers providing a full range of health insurance policies.

Consider each of the following examples:

- A low-income family where both husband and wife are aged 25, are both employed and have no dependents
- A wealthy single woman aged 53 with no children
- A medium to high income family with two children, where both adults are aged 42 with one in full-time employment and the other a full-time parent.

(i) Identify the likely health care needs for each example. [3]

(ii) Recommend suitable healthcare products to meet the needs identified in part (i) for each example. [9]

[Total 12]

5 Company B is a health and care insurance company specialising in long-term critical illness insurance business.

Company B currently reinsures a significant proportion of its critical illness business to external reinsurers. For a number of years the total premiums paid to the reinsurers by Company B has been higher than the corresponding reinsurance recoveries. The Finance Director of Company B has expressed concerns that reinsurance does not represent good value for money for Company B.

The Finance Director has asked an actuary to carry out an investigation into how reinsurance impacts the profitability of Company B's critical illness business.

(i) Discuss how the actuary could carry out this investigation. [7]

(ii) Outline factors other than the impact on profitability that Company B should consider when deciding on whether to continue reinsuring a significant proportion of its critical illness business externally. [7]

Having reviewed the actuary's investigation, the Finance Director has agreed that it is appropriate to continue reinsuring a significant proportion of Company B's critical illness business to external reinsurers. The Finance Director has asked if there are any actions which could be taken to improve the cost effectiveness of Company B's reinsurance arrangements.

(iii) Suggest possible actions Company B could take to make its existing reinsurance arrangements more cost effective. [6]

[Total 20]

6 (i) Define No Claims Discounts (NCD) in the context of private medical insurance business. [2]

Company XYZ is a health and care insurance company writing both individual and group Private Medical Insurance (PMI) business in Country Z.

Unlike the majority of health and care insurance companies in Country Z, Company XYZ does not offer NCD on their PMI business. Following a proposal from the Marketing Director of Company XYZ, the Board has asked an actuary to conduct an investigation to help the Board determine whether a NCD rating structure should be introduced for its PMI business.

(ii) Discuss the factors the actuary might consider in their investigation. [12]

[Total 14]

7 A health and care insurance company has sold individual Long-Term Care Insurance (LTCI) business for many years. The insurer is reviewing its investment strategy for the assets backing its LTCI business.

(i) State the principles of investment for a health and care insurance company. [2]

(ii) Discuss the process the insurer would undertake to develop an appropriate investment strategy for its LTCI business. [7]

(iii) Discuss the factors to be considered in determining an appropriate asset-liability matching strategy for the insurer's LTCI product. [6]

[Total 15]

END OF PAPER