

# EXAMINATION

5 September 2006 (pm)

## Subject CA3 — Communications

*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. *Attempt Question 1 AND Question 2.*

### **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.*

- 1 A company is intending to add new options to an existing flexible benefits scheme for all its staff from 1 January 2007.

Under the scheme, individuals are provided with a certain number of points at the start of a year and are then able to spend these points on a combination of benefits. The benefits are optional — an individual is not obliged to buy any of the benefits — and any unused points in any one year can be converted to cash (1 point translates to £1).

One of the new options to be offered is a healthcare arrangement.

Under the arrangement, the cost of claims is settled in full by the company - ie the scheme is to be “self-insured”.

The company wishes to determine how many points it will charge employees for the 2007 year based on the expected cost of claims over 2007.

The company has commissioned an independent report to get an indication of what the typical first-year cost might be. Data was collected from a survey of companies in the same industry who have operated such schemes for some years. The data has been summarised as follows:

<i>Age of members</i>	<i>Number of members in age range (a)</i>	<i>% of members expected to claim in 2007 (b)</i>	<i>Average expected claim amount in 2007 (£) (c)</i>	<i>Total expected cost of claims in 2007 (£) (a) × (b) × (c)</i>
Under 45	7,000	20%	1,500	2,100,000
Over 45	3,000	40%	4,000	4,800,000
Total	10,000			6,900,000

Based on the above table, and in order to make the proposed flexible benefits scheme simple and attractive, the company has proposed that:

- (1) The healthcare benefit will cost 700 points, ie virtually in line with the average cost per employee in the survey, and will not vary by age;
- (2) There will be no medical exam and no other entry requirements at outset. If an employee has a pre-existing medical condition this will be covered by the new healthcare arrangement, so long as the individual joins on the start date.

The profile of the company’s own employees is as follows:

<i>Age of employees</i>	<i>Number of employees in age range</i>
Under 45	120
Over 45	280
Total	400

A note in the independent report commissioned by the company reads:

“We have no reason to believe that over the long term the percentage of your staff in each age group expected to make a claim is likely to differ much from the percentages in our survey. However, in setting the cost of the healthcare scheme, we advise you to change the terms of entry so as not to be selected against by those individuals who have pre-existing conditions. We also advise that a charge of 700 points is too generous given the staff age profile.”

The personnel manager at the company has asked you, as actuary advising the company on its benefit arrangements, to set out your comments on the above in a memorandum. Your memorandum should:

- (1) Explain what the independent report means by selection and why it could impact on the company's costs in year 1; and
- (2) Include brief comments on the appropriateness of the market research data and explain why charging a flat rate of 700 points could lead to the scheme being more costly than anticipated. You should also include brief reference to a more appropriate level of premium.

Draft a reply in approximately 500 words.

You do not need to take account of the following:

- tax
- accuracy of the market research data
- whether the company is right to self-insure the benefit
- other benefits available under the flexible benefits scheme

[60]

- 2 You work for a life assurance company. Your company has recently received the following letter from a policyholder's widow:

2 September 2006

Dear Sirs,

Unfortunately my husband, Mr J Smith died on 24 August. I have found a document from your company, which is enclosed.

The policy seems to give me £3,000 a year for 25 years after my husband's death. However, I really need the money now, and would be grateful if you could pay the full £75,000 immediately. Please tell me if you need anything more from me before you can pay this.

Yours faithfully,

K. Smith (Mrs)

A summer student working in your team has drafted the following response:

5 September 2006

Dear Mrs Smith,

**Policy Number 23581113 — J Smith (Deceased)**

Entry date: 1/9/1997

Expiry date: 31/8/2022

Thanks for your letter.

You obviously don't understand your husband's policy. It only provides family income benefit until the expiry date. The duration at death was 8 years 11 months, so the term remaining is 16 years 1 month. That's how long the benefit is payable for.

But I've got good news for you. This is an increasing family income benefit so the sum payable escalates at 3.00% p.a. (compound) at each annual renewal date. The current benefit is £3,800.28 p.a. (£316.69 p.m.). I'm attaching a schedule showing the yearly benefit.

We'll let you commute future payments, but obviously we'll need to discount them back to the next monthly renewal date at 5.00% p.a. (compound). So the claim value is £53,332.65.

Your husband should have taken out a level term assurance for £75,000.00 to give you the claim value you want. But at least it's not a reversionary annuity because you wouldn't be able to commute that.

Please send in the death certificate, your marriage certificate and the enclosed discharge form duly completed so that we can process your claim.

Yours faithfully

P. Brown  
Actuarial Manager

### Schedule of payments

<i>Year</i>	<i>Benefit in year</i>	<i>Monthly payment</i>
1	£3,000.00	£250.00
2	£3,090.00	£257.50
3	£3,182.76	£265.23
4	£3,278.16	£273.18
5	£3,376.56	£281.38
6	£3,477.84	£289.82
7	£3,582.12	£298.51
8	£3,689.64	£307.47
9	£3,800.28	£316.69
10	£3,914.28	£326.19
11	£4,031.76	£335.98
12	£4,152.72	£346.06
13	£4,277.28	£356.44
14	£4,405.56	£367.13
15	£4,537.80	£378.15
16	£4,673.88	£389.49
17	£4,814.16	£401.18
18	£4,958.52	£413.21
19	£5,107.32	£425.61
20	£5,260.56	£438.38
21	£5,418.36	£451.53
22	£5,580.84	£465.07
23	£5,748.36	£479.03
24	£5,920.80	£493.40
25	£6,098.40	£508.20

*Note: Payments start on the last day of the month of death, and are monthly thereafter until the expiry date.*

Redraft the response to Mrs Smith in about 400 words. You can assume that all the factual information provided by the summer student is accurate. [40]

**END OF PAPER**