INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

April 2017

Subject SA1 – Health and Care Specialist Applications

Introduction

The Examiners' Report is written by the Principal Examiner with the aim of helping candidates, both those who are sitting the examination for the first time and using past papers as a revision aid and also those who have previously failed the subject.

The Examiners are charged by Council with examining the published syllabus. The Examiners have access to the Core Reading, which is designed to interpret the syllabus, and will generally base questions around it but are not required to examine the content of Core Reading specifically or exclusively.

For numerical questions the Examiners' preferred approach to the solution is reproduced in this report; other valid approaches are given appropriate credit. For essay-style questions, particularly the open-ended questions in the later subjects, the report may contain more points than the Examiners will expect from a solution that scores full marks.

The report is written based on the legislative and regulatory context pertaining to the date that the examination was set. Candidates should take into account the possibility that circumstances may have changed if using these reports for revision.

Luke Hatter
Chair of the Board of Examiners
July 2017

A. General comments on the *aims of this subject and how it is marked*

1. The aim of the Health and Care Specialist Applications subject is to instil in the successful candidates the ability to apply knowledge of the United Kingdom health and care environment and the principles of actuarial practice to the provision of health and care benefits in the United Kingdom.

2. Candidates who approach the questions, especially the more substantial elements of each question, in a methodical and detailed manner are far more likely to pass the subject. Candidates will gain few marks if they do not address the question asked but merely write around the topic of the question. The mark allocation for each question part gives an indication of the relative length of answer or number of points to be made to gain full marks.

3. It is often helpful to use subheadings when answering long part questions.

4. Candidates who give well-reasoned points, not in the marking schedule, are awarded marks for doing so.

B. General comments on *student performance in this diet of the examination*

1. This paper was more challenging than SA1 papers in recent diets and so an adjustment was applied to every candidate's marks to allow for this.

2. Well-prepared candidates scored well across most of the paper. As in previous diets, questions that required an element of analysis or application of knowledge were less well answered than those that just involved bookwork. The comments that follow the questions concentrate on areas where candidates could have improved their performance.

C. Pass Mark

The Pass Mark for this exam was 55.

Solutions

Q1 (i) Health data that could be captured include:

Pulse [½]
Heart rate [½]
Heart function [½]
Temperature [½]
Calories burned [½]

Levels of activity: [½]
- type of activity e.g. cycling, swimming etc., identified by activity pattern [½]
- distance/steps walked [½]

- elevation/floors climbed [½]
- length of periods of inactivity [½]
- frequency of activity [½]
- intensity [½]
- duration of each period of activity [½]

Amount of sleep [½]
Quality of sleep [½]
Stress [½]

Exposure to harmful substances: [½]
- smoke [½]
- pollution [½]
- chemicals [½]
- drugs [½]

Information whilst claim in payment [½]
e.g. drug regime [½]
Could record specific achievements over a specified time period to monitor progress of individual and encourage good health [½]
e.g. fastest mile/kilometre, longest run [½]
[Max 5]

(ii) If permitted:
Age [¼]
Gender [¼]
Height [¼]
Weight [¼]
BMI [¼]
Medical history [½]
Previous claim history [½]
Chosen disability definition [½]
Deferred period [½]
Chosen replacement ratio [½]
Occupation [¼]
Location [¼]
Financial underwriting e.g. [½]
Salary [¼]
Other sources of income [¼]
[Max 4]

(iii) The insurer will need to consider whether an existing device is available on the market. [½]
If not, they will need to commission (design and test) a suitable device. [½]
The development/provision of the device could be put out to tender. [½]
There must be enough devices to satisfy demand but the insurer won't want to purchase a surplus. [½]
The device must be provided securely to the policyholder [½]
And retrieved when the policyholder ceases to be a customer. [½]
There must be a procedure to replace broken or faulty devices [½]

And a process to update them as functionality improves. [½]
Policyholders will need instructions to activate the device [½]
And support for technical problems. [½]

The insurer would need to ensure it complied with any relevant legislation/good data protection principles e.g. [½]
- Data only used for its proposed purpose [½]
- Data destroyed after requisite period [½]
- Cannot collect data what would not be allowed by legislation [½]

The insurer would need to make system changes to allow the data to be transmitted from the device to the company. [½]
Increased capacity to store considerable quantities of data within the company systems would be needed. [½]
There would need to be a secure system to transmit the data. [½]
The company will need to comply with data security procedures for collecting and storing the data [½]
And set up governance procedures. [½]
Data will need to be monitored on an ongoing basis [½]
And checked for consistency. [½]
There would need to be a system set up for policyholders to access and see their own data. [½]
If data is collected on couples/families the insurer would need to consider issues around the protection of the individual person's data. [½]

The insurer will need to write new data analysis routines [½]
And employ more staff to carry out the analysis. [½]
The insurer will need to have procedures to intervene if the data indicates potential health problems [½]
Or if the device is not being used or not used correctly. [½]
Any or all the above may require third party support, [½]
In which case would need to have suitable SLA and counterparty risk assessment. [½]
The insurer will need a process for communicating with policyholders on problems or non-compliance. [½]
The insurer will need a process to decide if the trial has been a success. [½]
The insurer must be able to discontinue one of the options at the end of the trial and move policyholders to the other option [½]
Or have the ability to continue to offer both options until customers choose to leave. [½]

Processes for non-compliance would be needed e.g. if a customer fails to wear the device as required [½]
Or gives it to a healthier, more active friend to wear instead. [½]

The insurer will need to decide how it is going to use the data collected to calculate the price to charge a customer [½]
And how often prices can be changed. [½]

The insurer would need the ability and process to combine standard rate with a personalised rate. [½]
Although the company is not repricing the product it will need to change the terms and conditions to allow the device to be used. [½]
The insurer may need to introduce some additional exclusion clauses [½]
Or strengthen its pre-existing condition wording [½]
Or limit the claim definition, deferred period, replacement ratio etc. [1]
The website would need to be developed to allow the completion of a simplified online application form. [½]
[Max 10]

(iv) Provided the policyholder meets the simplified acceptance criteria they will be accepted for the standard policy [1]
At standard rates. [½]
The policyholder will not have to answer further questions or undergo medical test which they may find intrusive [½]
This also cuts down the hassle factor for the purchase of their IP policy as no underwriting [½]
And allows a quicker application process. [½]
There is no claim underwriting so there is no risk of not receiving the income policyholders are expecting. [1]
Policyholders may see having the use of the device 'for free' as an advantage. [½]
There may be a better claims experience for policyholders by reducing conflict between the insurer and policyholder at the claims stage [½]
Option 2 may encourage better health for the policyholder. [½]
[Max 3]

(v) The device may be capable of tracking and transmitting the policyholder's location. [½]
This may cause problems if others can access this data (e.g. partners). [½]
The insurer may be required to disclose this information to the police etc. [½]
The device will gather very personal information [½]
e.g. the onset of heart disease [½]
or an increased risk of a stroke. [½]
There may be worries that health or fitness data may be made available to other parties [½]
Such as the state or employers. [½]
There may be a concern that the insurer uses the data for a purpose that the policyholder had not approved or expected. [½]
There may be a concern that a future insurer may be able to request this data. [½]
There may be a concern that the devices are not secure and third parties can hack into them [½]
Or the system which transmits the data is not secure [½]
Or the data is not held securely. [½]
There may be concerns about the capabilities of the device or future upgrades. [½]

If the device has a camera, perhaps to check the individual's identity, there may be a concern about the storage of pictures of the policyholder/their family. [½]

[Max 3]

(vi) For IP the major consideration is the claim and termination rates [½]
But for this trial the expenses will be a major factor. [½]
The insurer would need to consider if sufficient credible data had been collected over the trial period to make any decision. [½]
Comparison between the two groups would be made of [½]
claim inception rates. [½]
length of claim. [½]
number of fraudulent claims. [½]
lapse rates. [½]
cost of bringing the policy onto the books e.g. [½]
normal cost of underwriting and claim underwriting. [½]
cost of issuing and using the device. [½]
number of claims normally declined. [½]

The popularity of each option would be considered e.g. numbers choosing each option. [½]
Adverse feedback from policyholders [½]
e.g. practical issues with wearing the device. [½]
requests to switch options. [½]
Need to consider any technical issues e.g. is it reliable, waterproof, [½]
The transmission of data e.g. if the policyholder is abroad do the devices still transmit; [½]
If not, can the device store sufficient data until the next transmission. [½]
Need to consider the quality of data received [½]
e.g. is it accurate, attributable to a particular policyholder record. [½]

Need to consider the profitability of each group. [½]
Need to consider the mix of business by policy size, claim definition etc. [½]
As far as possible the data should be standardised to remove the effect of differences between the composition of the groups so the above comparisons should be split by: [½]
Age, occupation, claim definition, replacement ratio etc. [½]
Would need to consider whether the profitability of additional business written exceeds the additional set up/ongoing costs. [½]
Would need to consider the profitability and volume together to assess overall impact [½]
e.g. product level profitability may be lower for Option 2 but may write a lot more business such that profit x volume is much better for Option 2. [½]
The insurer would need to consider the correlation between activity levels and claims experience to check for any links. [½]

The insurer would need to consider the cost of the device, numbers of lost/damaged devices. [½]
The insurer would need to consider the cost of collecting, storing and processing the data [½]
The insurer would look at the overall actual costs compared with the estimated benefits and whether it is cost effective. [½]
The insurer would consider if there had been any media interest or other publicity or interest from competitors [½]
And, if so, how the proposal had been received. [½]
The insurer would also consider whether there any other unforeseen advantages or disadvantages [½]
e.g. attracting younger or healthier policyholders, increase in overall lapses. [½]
The insurer would consider whether the cost of reinsurance been reduced overall. [½]
The insurer would need to consider any issues with either option that had caused reputational problems e.g. data breaches with Option 2. [½]
The actions of competitors would need to be considered, especially if they have done something similar and introduced option 2 type products [½]
Or was there a better/cheaper form of technology available. [½]
[Max 9]

(vii) The insurer could take out suitable reinsurance/coinsurance. [½]
As well as transferring risk, the reinsurer can also provide technical assistance with pricing and underwriting, that also helps to reduce risk. [½]
The insurer could reprice the IP more frequently. [½]
The insurer could ensure terms and conditions of the product sufficiently robust to avoid unexpected claims, for example: [½]
Enhance the pre-existing condition exclusions. [½]
Have an actively at work requirement for purchase. [½]
Extend deferred period. [½]
Strengthen definition of disability. [½]
Reduce expiry age. [½]
Remove any escalation of benefit [½]
Or other options. [½]
Reduce percentage of salary / replacement ratio. [½]
Restrict the definitions of income. [½]
Increase exclusions e.g. no cover whilst abroad, if not working. [½]
Limit the benefit payable per person if individual, or per annum if group. [½]
Offer rehabilitation/partial benefit if able to do some work. [½]
Offer IP on own occupational definition for a short time (six months) and [½]
thereafter use any occupation or Activities of Daily Living (ADLs). [½]
The insurer would ensure that the morbidity data is relevant to the policyholders expected to buy option [1]
And monitor the existing policyholders who chose to lapse. [1]
The insurer could investigate changes in the level of fitness/health of members during the trial [1]
And on the length of their recovery. [½]

The insurer could introduce margins in pricing and reserving to allow for the increased uncertainty. [½]
The insurer could offer NCD etc. to improve experience and the quality of policyholders. [½]
The insurer could use the data gathered from the device to offer premium discounts to healthier policyholders [1]
And to identify beneficial rehabilitation activities/techniques. [1]
The insurer could introduce/improve claim counselling [½]
And provide targeted advice to policyholders to improve their health pre-claim. [½]
The insurer could offer discounted premiums to incentivise policyholders to increase their activity levels/improve their health. [½]
A similar increase in premiums for unhealthy policyholders could lead to increased lapses of 'bad' risks. [½]
The insurer would ensure product remains competitive so that good risks do not surrender and move to a competitor leaving a worsening portfolio of business. [½]

[Max 8]

[Total Max 42]

This question required students to apply their knowledge to a particular situation and to consider some of the issues involved from both the point of view of the insurer and the insured. Most students provided a good range of relevant point on most of the part questions and hence generally performed well

Part (i) and (ii) were generally well answered with candidates providing a wide range of relevant points.

Part (iii) was generally less well answered. Several candidates focussed in detail on one or two particular aspects, such as the functionality of the device, how it would be powered etc and hence didn't provide a wider range of points on different aspects that would have scored more marks. Relatively few candidates discussed matters relating to data protection and governance.

Part (iv) was usually very well answered with many candidates providing a good range of points.

Part (v) was generally reasonably well answered with most candidates covering a range of points. Only the better candidates tended to discuss the possibility of the insurer using the data for a purpose that policyholders might not expect or approve, or that the data might be requested by other bodies such as employers or the state.

Part (vi) was usually well answered with many candidates again providing a good range of points. Few candidates discussed that the level of expenses would be important or that a cost benefit analysis would be carried out. Similarly few candidates discussed possible reputational issues.

Part (vii) was generally reasonably well answered. The better candidates provided a wide range of possible alterations to the terms and conditions of the product.

Q2 (i) The operational risk module is relatively simple, being based on percentages of earned premiums and technical provisions. [1]
The resultant operational capital amount is added to the BSCR, [½]
with no recognition of any partial correlation or diversification effects with other risks. [½]
[Total 2]

(ii) Varied and wide-ranging nature of operational risk itself causes key challenges [½]
There may not be enough credible data to accurately model the main aspects of operational risk [½]
And any outside data available may not reflect the risks of the insurer's business [½]
Leading towards a more scenario-based approach. [½]
However this places a large reliance on expert judgement, which could be subject to bias and brings challenges, especially when validating approaches and results. [1]
There may be difficulties in determining VaR if there is insufficient credible data to work out the underlying loss distribution for operational risk. [½]
Operational risks are generally non-financial in nature so modelling with traditional financial models can be very difficult. [½]
Developing an internal model will be expensive – need to have an allocated budget. [½]

The resources and expertise required to construct internal model significant. [½]
The insurer would need to consider whether these are available, either internally or externally. [½]
Considerable time investment will be required to develop the model. [½]

There is a need to meet the tests required for the approval process (IMAP). [½]
The insurer needs to consider the feasibility of getting internal model approved. [½]
There is likely to be limited regulatory guidance. [½]
Ongoing compliance will be difficult. [½]
Due to the reliance on data, there is a need to ensure identification and assessment processes are rigorous. [½]

The "use" test
Will need to be able to get the resulting model embedded in the company's internal governance, risk management and the economic and solvency capital assessments [1]
There is a need to get senior management buy-in to the output. [½]
It could prove difficult to explain the model to senior management/board. [½]

Statistical quality standards
Will need to demonstrate that the data and assumptions meet statistical quality standards. [½]
The model will need to allow for interdependence of risk drivers [½]
There will likely be data issues that will require reliance on expert judgment. [½]

Need to meet **Calibration standards**:
Data scarcity of operational risk event data is a key issue. [½]
An individual firm will not possess a truly complete dataset of operational risk events, [½]
regardless of how mature their data collection process is. [½]
Given the extensive scope and diversity of operational risks, it can be difficult to identify key risks [½]
and to model how they are correlated [½]
and potentially interact with each other [½]
e.g. product risk due to poor T&C and administration errors. [½]

Profit and loss attribution:
The insurer will need to be able to use the internal model to explain the causes and sources of actual profits and losses. [½]
The model may take account of risk mitigation techniques [½]

Validation standards: will need to decide how to validate the standards [½]
The risks are quantified using a Value-at-Risk (VaR) measure, with a 99.5% confidence level, over a one-year-period [½]
The dependency of risks and parameters in the extreme conditions (99.5% VaR) is difficult to validate [½]
because of a lack of data in the tails of distributions. [½]
Validation would also entail testing model results against emerging experience. [½]

Documentation standards: the insurer will need to provide documentation that clearly sets out the design and operational aspects of the internal model. [½]
The insurer may ultimately prefer to model operational risk using a standard formula as it is arguably easier to do so. [½]
[Max 10]

(iii) Single loss estimate/stress testing [1]
– this yields a single deterministic value. [1]

Loss distribution/stochastic modelling [1]
– modelling frequency and severity separately OR just one distribution. [1]

Model based on scenarios [1]
– ensuring that their scenarios provide coverage of the operational risk categories and their risk profile. [1]

Hybrid model [1]
– scenarios and loss data combined. [1]
[Max 4]

(iv) The number of legacy policies in force will reduce over time [½]
And if the insurer retained the business, then the overhead component of the expenses will rise [½]
To the point that profits from the legacy products will be significantly reduced. [½]
Outsourcing this business would allow the insurer to focus on the core business [½]
And simplify its administration and other systems [½]
And free up staff for other projects that are more profitable. [½]
The outsourcer may be more efficient/skilled at managing the run-off business [½]
And therefore costs may be less for the insurer outsourcing over the long term. [½]
It would also help avoid problems relating to the legacy products. [½]
The insurer may no longer have staff with the appropriate skills to manage the business. [½]
This could reduce operational risk if third party has experience of products [½]
[Max 3]

(v) It is likely that some products will be more expensive to administer than others which will result in cross-subsidies. [½]
Also, it is likely that the termination rates vary by products [½]
And so as time progresses, expense cross-subsidies may be exacerbated. [½]
For example, if the products that have the higher administration costs terminate early thus leaving the products that have lower administration costs [½]
The insurer will likely be financially worse off, i.e. see a reduction in the embedded value. [½]
The financial effect of the agreement will also be influenced by how the fixed rate of increase compares with the companies embedded value assumption. [½]

It is likely the assumed expense inflation in the EV would be less than 5% p.a. [1]
So this element of the agreement will likely be a reduction in the insurer's EV. [1]
However, the insurer may have assumed higher future expenses in the EV assumptions to allow for increasing costs on run-off, [1]
So the outsourcing expenses may produce a reduction in the costs, [1]
Leading to an expected increase in EV. [1]
The initial loadings being 10% more than the current loadings will also contribute to a reduction in the EV. [1]
Costs of this business is now fixed. [1]
The costs of errors is reduced if the third party is liable for these. [1]
If not, this could increase operational risk, especially if the third party has little knowledge of the products. [1]

The expense risk has reduced [1]
But counterparty risk has increased. [1]
The reduction in expense risk will likely more than offset the increase in counterparty risk; [1]
Therefore the risk discount rate may be reduced. [1]
Any reduction in discount rate will increase the EV. [1]
However, the increased counterparty risk may lead to a higher capital requirement and therefore a reduction in any shareholder assets, leading to a further fall in EV. [1]
[Max 5]
[Total Max 24]

Part (i) was bookwork and generally very well answered.

Part (ii) asked for a description of the challenges in building an internal model, which covers such items as lack of data, availability of expertise, time and money. However, many candidates merely listed various tests for the internal model and so missed out on a wide range of possible marks.

Part (iii) was generally not well answered with most candidates mentioning only a stress testing approach or a loss distribution/stochastic modelling approach.

Part (iv) was generally well answered. However, only the better candidates tended to make the points that profitability would reduce as the number of policies in force fell over time or mentioned that the use of a third party with experience of the products might reduce operational risk.

Part (v) was not well answered, as has been the case in past questions on discussing the implications of proposed changes on an insurer's embedded value. Many candidates gave relatively superficial answers focussing on the impact of the 110% loading. They failed to consider the impact of the inflationary effects; the fixing of the expenses under the administration agreement, any allowance for the run off that the company may have incorporated in its EV or potential changes in the risk discount rate.

Q3 (i) The Commission's key recommendations were:
Costs to be shared between the individual and the State. [1]
A cap on the maximum amount (e.g. £35,000) that an individual would have to contribute to the cost of their care over their lifetime [1]
Above which the State would provide the funding an older person's lifetime contribution. [1]
Individuals would also have to contribute to general living costs [1]
But at a recommended standard level. [1]
In addition, a significant increase to the current means test asset threshold was proposed. [1]
Other recommendations included greater alignment between social care and welfare benefits [½]
And increased integration of State health care and social care provision. [½]
[Max 3]

(ii) There is a risk that the policyholder does not understand the contract as it is complex [½]
And is not satisfied with the product purchased. [½]
The insured may have some impairment requiring some care costs but not significantly impaired to trigger the LTC condition so the policy does not pay out. [½]
For example, the LTC condition may not include mental incapacity, so should the insured suffer mental incapacity, insured may pass all ADLs but may require LTC. [½]
There is the risk that the investments do not perform well enough so that even with the guaranteed amount the full LTC costs of the insured will not be met. [½]
The insured will then have to either find the difference from other resources or put up with lower standard of care. [½]
The insured may select funds which are too risky and beyond their risk tolerance and lose a lot of the value of the unit-linked fund. [½]
For the unit-linked funds the insured and not the company bears the credit risk on these investment funds. Hence in the event of a credit event the insured bears the reduction in investment value. [½]
This is not the case with the Special Fund. [½]
There is inflation risk during the period before benefits are payable, [½]
Where the value of guaranteed benefit is eroded in real terms from the start of the plan to the commencement of benefits, which could be a long period, thus purchasing less LTC than initially planned. [1]
There is also inflation risk when the benefits are payable, [½]
Where the level of benefits in payment does not keep pace with increasing LTC costs. [½]
For example, there is a risk of large medical expense inflation meaning that the cost of care may increase at a higher rate than the CPI per annum that the income payments increase at. [½]
There is some morbidity risk borne by the insured. [½]
If morbidity worsens during the period of the policy then the morbidity charges may be increased by the company [½]
And that could exhaust the unit-linked funds before the LTC conditions are satisfied [½]

So that the unit-linked funds exhaust earlier than expected [½]
And there is no payment from the non-guaranteed part, reducing the overall expected income. [½]
There are no withdrawal benefits so the insured cannot access any funds if LTC is required but these do not trigger payment from the policy. [½]
The insured also bears expense risk [½]
Because if expenses rise more than expected the company may pass some or all of this on to the insured as the admin charges and investment charges are reviewable [½]
And increases in charges will reduce the investment funds which could lead to early exhaustion of the non-guaranteed fund and hence reduce the total benefits provided by the policy. [½]
The insured is exposed to changes to personal tax on benefits that reduce net benefits [½]
And depending upon policy wording tax changes to the company. [½]
The insured is exposed to the insolvency of health care company. [½]
The insured has set a level of income payable whilst the benefit is paid which is not reviewable, [½]
So there is a large risk of over/under estimating the level of income required for LTC [½]
[Max 9]

(iii) Any guarantee offered by insurer represents a risk. [½]
In this case the guaranteed part provides a guaranteed level of benefit payment which could potentially last a long time and result in a loss for the insurer. [½]

Pricing risks
The pricing (setting of charges) and initial premium may be incorrect for the risk and lead to loss for insurer. In particular, [½]
The insurer can underestimate morbidity claim frequencies/incidences [½]
So that the morbidity charges do not cover the long term care costs provided by the guarantee and the unit-linked morbidity charges. [½]
For the guaranteed part, the insurer can underestimate future changes in morbidity claim frequencies. [½]
The insurer can underestimate life expectancies, [½]
i.e. in payment mortality lower than expected. [½]
For the guaranteed part, the insurer can underestimate future improvements in mortality so that many more policyholders live to start claiming benefits [½]
If the insurer allows for individuals receiving long term care recovering it may over estimate these recovery rates resulting in claims being paid for longer on average. [½]
There is a risk that the insurer's management expenses, both direct and overhead expenses, are not covered by unit-linked charges and expense loadings in the guaranteed part due to higher inflation than expected. [½]

Sales/business mix
Sales volumes may not be sufficient to cover development costs of setting up and marketing the product [½]
There is business mix risk as the risk, and so the ultimate profitability, varies by sex and premium size [½]

The single premiums received may be lower than expected. [½]
More females may purchase the policy than expected [½]

Underwriting
There is a risk that the insurer underwriting is not sufficiently thorough so that the insurer wrongly estimates the morbidity risk posed by the applicant. [½]
Anti-selection may be a risk if the underwriting is not sufficient to fully assess the impairment level of all applicants, so that the guaranteed benefit is set appropriately and the morbidity charges set correctly. [½]
There is a risk of non-disclosure from applicants which may lead to the incorrect guarantee part being set, or incorrect morbidity charge for the risk the policyholder represents. [½]

Investment Risks
The investment returns on guaranteed part may be lower than required to meet the long term cost guaranteed benefit. [½]
The insurer faces potential credit risk on the assets backing the guaranteed part or the assets backing the in payment claims, through defaults or deferments on corporate bonds, derivatives etc. [½]
The insurer faces potential liquidity risks if the assets are not that liquid, as the product pays cash benefits in the event of early deaths before LTC claim and a large monthly income for claims in payment. [½]
The assets may not keep in line with CPI. [½]
The term and nature of the assets do not match the term and nature of the liabilities [½]
So that following changes in the market, for example interest rates, the difference between the liabilities and assets increase in a negative way [½]
Thereby reducing the solvency of the insurer. [½]
There is a risk of poor performance/fraud by the investment managers [½]

Operational risks
There are a number of unit pricing risks that the insurer is exposed to; for example, unit pricing error caused by using a wrong tax rate in unit-pricing, not including the correct asset values, wrong pricing basis when fund is expanding or contracting. [1]
The insurer may pay out wrong benefits to a policyholder; for example it may pay out the wrong amount or increase income by the wrong rate. [½]
Poor claims management could lead to fraudulent or disputed claims. [½]
Administration system could contain errors in program code; for example, applying wrong morbidity rates [½]
Problems may arise following input data errors [½]
This takes staff resources from other more profitable areas. [½]
The insurer potentially face various tax risks, changes in how the insurer is taxed on the business, errors of tax in unit pricing. [½]

Reinsurance risks
There is a risk that the reinsurance counterparty fails to provide the promised reinsurance cover if the business is reinsured. [½]
There is a risk that insurer may not secure suitable reinsurance or suitable reinsurance at a suitable price. [½]

With guarantees the capital requirements will be large so if the insurer writes too much business there is a risk to solvency. [½]

Product risks

There may not be a large range of unit-linked funds to choose from for investment – this may lead to a lack of sales for the product. [½]
There is a risk that the ADLs are too generic or too complicated that policyholders do not know if they can claim or not. [½]
The ADLs should be industry standard or clearly worded so there is no doubt. [½]
There are risks arising from policy wording, for example errors in the policy terms. [½]
If death occurs before benefit is claimed there is another guarantee to repay initial investment. [½]
This guarantee may bite if units have performed badly and the value of the assets backing the special fund are less than the initial premium. [½]
There is a reputational risk of not meeting policyholders' reasonable expectations if the benefit does not cover the cost of their long term care [½]
or the non-guaranteed part is not paid. [½]
This may lead to unexpected claims costs. [½]
The morbidity charges are reviewable based on experience and there is a risk that the insurer cannot increase the morbidity charges sufficiently to cover future LTC costs. [½]
The lack of a withdrawal benefit may lead to policyholder complaints (TCF) [½]
and possible regulatory action [½]
e.g. payment of compensation. [½]
There is a sales risk that the product appears too complicated and this puts off buyers as they don't fully understand the product. [½]
Product complexity may lead to distributors mis-selling the product to policyholders who don't need or want the type of cover on offer [½]
Or distributors don't fully understand the charges deducted from the fund. [½]

Other risks

The premium may be perceived as expensive resulting in low sales. [½]
There could be regulatory changes to how the business is sold [½]
or how the Long Term Care is treated by Government reducing future sales, i.e. political risks. [½]
There is the risk of fraud by staff/policyholders or intermediaries. [½]

[Max 16]

(iv) With so few policies sold, the funds under management will be very modest.
This could present investment problems for the insurer. [½]
The low funds in a unit linked funds means that the insurer will have difficulty meeting the objectives, restricting the diversity of assets. [½]
This could affect investment performance, [½]
and increase the risk category of the fund more than presented in the policy documents [½]
This could contravene policyholder expectations [½]

Which could result in regulatory intervention and potential fines and policyholder compensation. [½]
If the insurer has similar unit-linked funds used by other products the company could use these funds to avoid the above issues. [½]
For the guaranteed part, the level of funds may not be sufficient for the insurer to follow a matched policy or to buy desired assets with the policyholder money received. [½]
With so few policies in force it will be difficult for the insurer to justify any increases in morbidity charges because of deteriorating claims experience. [½]
This is because random fluctuations in the claims experience is likely to swamp any deterioration in experience. [½]
Similarly, reviewing other charges based on expense experience would also be very difficult because of the small number of policies. [½]

The business written will be very unprofitable for the following reasons: [½]
The charges on the unit-linked and expense loadings on the guaranteed part that will be received by the insurer will not recover development costs or marketing costs. [½]
The ongoing charges deducted for fund management and policies will not cover the ongoing costs of admin and system. [½]
The insurer will have to hold more capital per policy than initially planned due to greater variability of future morbidity, expense experience and operational risks. [½]
The increase in capital will reduce profitability. [½]
The low sales volumes could be an embarrassment for the insurer and so a loss of reputation. [½]
Poor market perception could lead to negative customer sentiment, [½]
Brand damage form media attention and [½]
Increased lapses on other products [½]
Distributors may be upset that they have trained staff to sell this product that is now being abandoned. [½]
Reinsurers may want to recover any losses incurred, for example by ceding a share of any new business line [½]
or the treaty may require exit penalties. [½]
There may be reallocation of staff required or redundancies [½]
Which could adversely affect service to policyholders as the business runs off. [½]
The insurer would need to consider how to treat policyholders currently in process of buying a policy. [½]
It is expensive to run off a small book which could last for many years [½]
The insurer may be able to sell to a third party [½]
Or incentivise policyholders to leave. [½]

Alternatively, if the product is perceived as innovative by the intermediaries then it could enhance the perception of the company [½]

[Max 6]

[Total Max 34]

Part (i) was not well answered, despite being bookwork.

Candidates generally provided a reasonable range of points in part (ii), although only the better candidates generally mentioned the fact that the level of income was chosen at the outset of the policy and was not reviewable and hence may not be sufficient by the time that LTC is required or separated out the investment risks between the UL and non-linked parts and considered the differences in morbidity risks between the UL and non-linked parts before benefits are in payment. Several candidates did not consider the inflation effects before and after benefits would be payable.

Part (iii) was not always well answered with candidates generally not providing a wide enough range of points to score well, particularly for issues relating to investment risk (such as credit risk, liquidity risk and mismatching) and operational risk (such as administration errors, data input errors, paying the wrong benefit amounts, poor claims management). On the other hand, issues relating to pricing risk and sales/business mix risks were generally well covered as were specific product risks, suggesting that candidates were applying their knowledge to provide points relevant to the specific product described.in the question. It was particularly pleasing to see students providing subheadings for the various areas they considered.

Part (iv) was generally reasonably well answered; however, few candidates discussed the issues arising from the low amount of funds under management or that it would be difficult for the insurer to review morbidity and expenses charges. Similarly whilst several candidates said that the business would become unprofitable they did not always discuss why. Few candidates mentioned the need to consider how customers currently in the process of buying the policy should be treated.

END OF EXAMINERS' REPORT