

COURSE COVERAGE

Question	Unit	Key Performance Outcome	Learning Objective	Page Reference in Course Textbook	Marks
1 a	1, 2, 4	1.1, 2.5, 4.14	1.1.1, 2.5.4, 4.14.1,	Ch 1, 17, 18	8
1 b (i) (ii)	2, 3, 4	2.5, 2.6, 3.9, 3.10, 3.11, 4.13, 4.14	2.5.1, 2.6.1, 3.9.1, 3.9.2, 3.10.3, 3.11.3, 4.13.1, 4.13.2, 4.14.1		12 2
1 c	1, 2, 4	1.2, 1.3, 2.4, 2.7, 4.12	1.2.1, 1.2.3, 1.2.4, 1.3.3, 2.4.2, 2.4.3, 2.7.1, 2.7.3, 2.7.4, 4.12.2, 4.12.3		8
2 a (i) (ii) (iii)	1, 2, 3	1.1, 1.2, 2.6, 3.9, 3.11	1.1.1, 1.2.3, 2.6.3, 2.6.4, 3.9.5, 3.11.3	Ch 1, 7, 10, 16	3 4 5
2 b (i) (ii)	1, 2, 3	1.1, 1.2, 1.3, 2.4, 2.6, 2.7, 3.9, 3.10, 3.11	1.1.1, 1.2.3, 1.3.3, 2.4.2, 2.4.3, 2.6.1, 2.6.4, 2.7.1, 3.9.5, 3.10.3, 3.11.5		5 5
2 c					8
3 a (i) (ii)	3	3.8	3.8.2	Ch 8, 13	8 3
3b (i) (ii)	3	3.8	3.8.3		6 5
3c	1, 2	1.1, 1.3, 2.5	1.1.2, 1.3.2, 1.3.3, 2.5.1, 2.5.2, 2.5.5		8

QUESTION 1: MARKING GUIDE

a)

- Calculation of cumulative improvement factors based on $q_x * (1 - z)^{(t-1)}$. **(1 mark)**
- Calculation of effective q_x allowing for improvement factors. **(1 mark)**
- Product decrement table based on l_x , d_x and l_{x+1} . **(1 mark)**
- Indexation of annuity payments using compounding inflation of 2.5%. **(1 mark)**
- Projection of indexed annuity payments based on lives in force at the start of the year to age 110. **(1 mark)**
- Single premium cashflow based on lives in force at start of year (i.e. $l_x = 1$). **(1 mark)**
- PV Premiums: \$500,000. **(1 mark)**
- PV Benefits: \$461,220. **(1 mark)**

If there is an error at earlier steps, award marks if student demonstrates correct methodology in later parts of question.

(Total 8 marks)

b)

(i)

Premiums:

- A large single premium is received at commencement of an annuity contract. In contrast, small regular (annually stepped) premiums are received at regular intervals (e.g. yearly or monthly) for YRT. Both paid "in advance". **(1 mark)**
- Also YRT is (normally) yearly renewable which means that premium rates can be reviewed and changed over time whereas annuities cannot because the premium is paid upfront. **(1 mark)**
- Once an annuity contract commences, in most circumstances, it cannot be commuted (i.e. the annuitant cannot withdraw their residual value). Therefore, the amount of premium income is certain. In contrast, with YRT the life insured can lapse cover at any point in time and receive a refund of unearned premiums less fees, e.g. if paying annually in advance. **(1 mark)**
- The amount of YRT premium may increase each year to reflect the increasing risk and so as the life insured ages so the costs may become prohibitive. As such there is uncertainty regarding whether YRT will be renewed at each policy anniversary. In contrast this would not apply to single up front premium annuities. **(1 mark)**

(Max. 3 Marks)

Benefits / Claims:

- Regular (e.g. yearly or monthly) annuity payments are paid to annuitants for their lifetime. Whereas for YRT a lump sum benefit is only paid if the life insured dies while the policy is in force. **(1 mark)**
- The benefit amount for both annuities and YRT are known, given both the annuity rate and sum insured are set at policy commencement. **(1 mark)**
- For YRT the policy is usually underwritten and so there is a selection impact which will result in fewer claims in the early years and mortality will trend upwards towards a long term 'ultimate', whilst for annuities the self-selection impact means longevity (and mortality improvement rates) are higher than the general population. **(1 mark)**
- The timing of payment of annuity benefits is also known but the timing that annuity payments cease is uncertain. In contrast, whether the YRT lump sum is paid out and the timing of that payment are uncertain. **(1 mark)**

(Max. 3 Marks)

Investment returns:

(Students need to demonstrate an understanding of matching and the differences between having all the money up front and annual premiums)

- For annuities, the average time between receipt of premium and payment of benefits is longer with all premium received upfront whilst with annually stepped YRT the premium for each period is related to the risk for that period so there is less difference in amount and timing between premiums and claims. Comment should be made about it being prudent to try to match investment return cashflows with benefit payments to minimise risks, and identifying the differences between YRT and annuities in this regards, although with both there is uncertainty regarding the rate of investment return in the future. **(1 mark)**
- Investment earnings are also earned on premiums received and capital for YRT, although these are lower than annuities as investments are less risky and the size of premiums and capital is much smaller. **(1 mark)**

If a candidate draws a distinction between level premium YRT (where there is excess premium in early years to pay higher risk costs in later years) and annual stepped YRT where premiums charged are more closely related to the current years' risk costs, and thus there are differences in investment returns – credit should be given about this point.

(Max. 2 marks)

Acquisition, maintenance and investment management expenses:

- Both annuities and YRT would be subject to acquisition, maintenance and investment management expense assumptions. **(0.5 mark)**

- Acquisition expenses for YRT incorporates the cost of medical and financial underwriting, whereas annuities are unlikely to be underwritten (if a well-reasoned argument about sub-standard life annuities is given there could be justification for underwriting costs on a small percentage of lives). As a result, acquisition costs for YRT are therefore likely to be higher which would be reflected by a large cash outflow at commencement of a YRT contract. **(1 mark)**
- Maintenance costs differ between YRT and annuities. Unit cost assumptions for each product would be derived from an estimate of these costs, however the cash flow profile for both products would reflect these ongoing expenses. **(1 mark)**
- YRT claims require assessment by a claims assessor, whereas annuities require ongoing confirmation that the annuitant is still alive. Both would be subject to ongoing administration and customer service expenses as well as a (differing) share of the cost of overheads (regular premium versus single premium). **(1 mark)**
- Investment management expenses for annuities would be higher than YRT as the asset mix backing annuities needs to allow for their long-term nature (i.e. meaning more risky investments), cashflows need to be actively matched and the amount of assets is larger. **(1 mark)**

(Max. 3 Marks (1 Mark per expense assumption))

Commission:

- YRT cashflows would include an allowance for upfront and ongoing (renewal) commission and other commission related costs, whereas annuities would be subject to a new business commission given the business is single premium. **(1 mark)**
- Commission cashflows for YRT will depend on the year of issue. Under the Life Insurance Framework (LIF)¹ was originally announced as:
 - Maximum total upfront commission of 80% (+ GST) from 1 January 2016 decreasing to 60% (+ GST) from 1 July 2018.
 - Maximum ongoing commission of 20% (+ GST) from 1 January 2016.
- Subsequent changes to the date of implementation set these now as:
 - Maximum total upfront commission of 80% (+ GST) from 1 January 2018 decreasing to 60% (+ GST) from 1 January 2020.
 - Maximum ongoing commission of 20% (+ GST) from 1 January 2018.

(Business written prior to these changes may have initial commission in excess of 100% of the first year's premium).

Given the timing of announcements and that the framework is yet to be put in place either answer should be given credit unless the candidate demonstrates misinformation (i.e. originally announced as commencing in 2018).

(Award 1 bonus mark if student refers to changes under the LIF)

¹ <http://jaf.ministers.treasury.gov.au/media-release/032-2015/>

(1 mark for any other reasonable point that is well explained.)

(1 mark + 1 bonus mark)

(Total 12 marks (3+3+2+3+1) + 1 bonus mark))

(ii)

Capital:

- Due to the fact acquisition expenses (e.g. underwriting) and initial commission are greater than the first year's premium for YRT, a new business strain is incurred. Capital is required to fund this strain. **(1 mark)**
- There is a risk of not recouping these upfront expenses for YRT if the policyholder lapses early in the life (duration) of the contract in which case capital invested by the shareholder to cover the new business strain would not be returned to them meaning a loss is incurred. **(1 mark)**
- This does not occur with annuities given the large upfront single premium is greater than acquisition expenses and commission. Nonetheless capital is still required for annuities to protect against the risk of adverse experience. **(1 mark)**

Credit should be given for any well-argued reference to reinsurance and the differences between the standard reinsurance approaches for YRT versus annuities and the impacts on capital of surplus and quota share arrangements on the two lines of business.

(Max. 2 marks)

(Total 14 marks)

c)

MEMORANDUM

To: CEO of TrustMe for Life (TML)

From: Product Actuary

Date: DD MM YYYY

RE: Risks and their proposed/recommended mitigation associated with the introduction a new lifetime annuity product.

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The Australian Government is currently working on developing a framework which would require trustees of superannuation funds to offer members at retirement a product that provides an ongoing income benefit whilst protecting against longevity risk.

In response to this TML is considering developing a lifetime annuity that it could offer to its superannuation members as they approach retirement.

TML does not have prior experience writing lifetime annuity business.

This memo discusses the risks and proposed mitigates for them associated with this proposal.

Risk	Mitigation
<ul style="list-style-type: none"> A key risk for lifetime annuities is the risk that annuitants live longer than expected meaning TML would be paying annuity benefits for longer than was expected when pricing the product. This risk is called longevity risk. (1 mark) 	<ul style="list-style-type: none"> Pricing should be based on a suitably conservative mortality assumption that includes an appropriate allowance for initial self-selection and ongoing mortality improvement. This risk can also be mitigated through reinsurance. This is typically through a longevity swap agreement whereby the insurer agrees to pay the reinsurer a fixed schedule of annuity payments and in return, the reinsurer agrees to pay the ceding company the actual amounts due to the annuitants. While this would help to protect TML against losses arising from lives living longer, it also means TML would share with the reinsurer gain from lives dying earlier than expected. (1 mark) TML will need to hold capital to protect against adverse experience. (1 mark) TML will need to develop models to monitor experience of in force business, i.e. actual deaths relative to expected deaths. (1 mark)
<ul style="list-style-type: none"> Given this is a new product which TML does not have experience with, there is a risk that lack of technical expertise could lead to mispricing (failing to set suitable assumptions) and as a result making a loss. (1 mark) 	<ul style="list-style-type: none"> Sharing the risk via a reinsurance arrangement would also provide TML with access to the reinsurer's technical expertise to help us with pricing aspects. (1 mark) We should recruit individuals with suitable experience (pricing and managing lump sum business, ALM and similar investment management expertise). (1 mark) Given this is being driven by a change in Government legislation, other insurers will be introducing products (and

	<p>seeking to recruit suitable expertise) making it harder to obtain suitable expertise at a suitable price.</p> <ul style="list-style-type: none"> • Whilst TML will be able to benchmark our annuity rates against competitors' rates and adjust future rates accordingly, TML will need to be able to develop a dynamic pricing model where prices can be revised to reflect changes in interest rates and our appetite for new business volumes. Once a policy has been sold the annuity rates are fixed for the duration of that contract. (1 mark)
<ul style="list-style-type: none"> • Given this is a new product which TML does not have experience with, there is a risk that lack of technical expertise could lead to failure to appropriately manage the investment risks associated with lifetime annuities potentially resulting in a loss. (1 mark) 	<ul style="list-style-type: none"> • We should recruit individuals with suitable experience in ALM and similar investment management expertise. (1 mark)
<ul style="list-style-type: none"> • There is a risk that our proposed product design (and the methodology we use for setting the price and providing quotes) does not cater to the needs of our superannuation members: <ul style="list-style-type: none"> - This may be in conflict with trustee's obligation to act in the best interests of its members. (1 mark) - If quotes are guaranteed then the resulting take up could result in a loss due to the delay in investing the money. If quotes are not guaranteed then customers may complain if the price they get is less than the initial quote. (1 mark) - Sales volumes may not be as expected resulting in the product not meeting target requirements. (1 mark) 	<ul style="list-style-type: none"> • Trustees or their representatives should be engaged in the design process from the idea or screening stages to assess the suitability of the product for members. (1 mark) • We need to ensure we develop a suitable quotation system that reflects changes in interest rates on investments in real time (so that we can revise the rate offered whenever necessary). (1 mark) • Product disclosures should clearly communicate the risks and benefits of the product to help to ensure members are informed before purchase. (1 mark) • During the screening stage, we could run focus groups to test whether the product will appeal to potential customers and financial advisers. (1 mark) • We would need to obtain access to marketing expertise in this area, e.g. through employing experienced people or engaging a consultancy. (1 mark) • Once we have launched our product, we would need to: <ul style="list-style-type: none"> - Monitor and report on sales relative to targets and adjust accordingly. (1 mark)

	<ul style="list-style-type: none"> - Monitor and report on the assets purchased (and the investment yields obtained) relative to the interest rates assumed in the quote/pricing basis. (1 mark)
<ul style="list-style-type: none"> • Risks associated with the lack of expertise in the regular payment of annuity benefits include: <ul style="list-style-type: none"> - Not meeting customers' expectations for service standards, leading to complaints and reputational risk. (1 mark) - Continuing to pay annuity benefits after lives have died and not being able to recoup these payments. (1 mark) 	<ul style="list-style-type: none"> • To manage this risk, we need to: <ul style="list-style-type: none"> - Ensure the payment system has suitable functionality and establish service standards. (1 mark) - Establish an appropriate process that obtains evidence of survival from the annuitant at regular intervals (e.g. annual) such as requiring them to provide a simple statement (such as a statutory declaration). (1 mark)

Yours sincerely

Product Development Actuary

(1 mark for any other reasonable point that is well explained.)

(Risk: Max. 4 marks (students are expected to consider four different risks))

(Mitigation: Max. 4 marks (students are expected to provide a mitigating action for each risk))

(1 mark for memo format)

(Max. 8 marks)

(Total 30 marks)

END OF MARKING GUIDE QUESTION 1

QUESTION 2: MARKING GUIDE

a)

(i)

- In respect of active lives, there is uncertainty regarding when IP payments will commence. Therefore, some assets need to be liquid and short term in nature (e.g. cash, bank bills) to be able to commence payment of benefits at any point in time. **(1 mark)**
- Asset mix for IP open claims needs to accommodate regular, fixed and indexed, ongoing payments for the duration of the claim that can be up to a maximum of the benefit period, but for benefit amounts that are much smaller than lump sum payments. **(1 mark)**
- The benefit period determines the potential duration of payments if the claimant is unable to return to work. A benefit period of 1 year means that benefit payments would continue for a maximum of one year (per claimable incident). In contrast a benefit period to age 65 means benefit payments could continue up to age 65 or could cease earlier. **(1 mark)**
- Cash and government and corporate bonds (including inflation linked) in combination with some more risky, longer term assets may be appropriate for longer benefit periods (e.g. to age 65 years). Shorter term, less risky assets would be appropriate for shorter duration IP business, i.e. with a 1 year benefit period. **(1 mark)**

(1 mark for any other reasonable point)

(Max. 3 marks)

(ii)

- For both YRT and TPD, both the timing and the amount of payment to policyholders are uncertain with large claims payments required within a certain period from claims notification to confirmation of claims eligibility, as such a portion of assets need to be short term and liquid. **(1 mark)**
- YRT and TPD involve large lump sum payments, however IBNR tends to be longer for TPD due to the time required to verify that disability is total and permanent, meaning there may be more time between claims notification and confirmation of eligibility (e.g. TPD: 3-6 month, YRT: 1-3 months). **(1 mark)**
- For both YRT and TPD there is also a risk of claims volatility or a large volume of claims being paid over a short period, (e.g. due to impact of a few large claims or during a catastrophe). This is another reason why a portion of assets needs to be short term and liquid. **(1 mark)**
- There is a timing difference between the receipt of premiums and payment of claims for stepped and level premium business. For stepped premium business, the duration is shorter because premiums are set based on expected claims over the year, whereas for level premium business the duration is longer because premiums in the early years of the policy subsidise claims costs in the later years. **(1 mark)**

- For short term business, investment mix tends to comprise relatively short term, liquid asset (e.g. (bank bills), Government and semi-government bonds and highly rated corporate bonds.) **(1 mark)**

(1 mark for any other reasonable point)

(Max. 4 marks)

(iii)

- Actual investment returns should exceed the minimum level set by guarantees for the business to cover expenses and profit and for XYZ Life to smooth crediting / bonus rates. **(1 mark)**
- Policyholders share upside and limited downside of risk (80% of profits must be allocated to policyholders, although XYZ Life's shareholders would be liable for losses arising from the fact the crediting rate cannot be negative). Given some downside risk is shared with policyholders, XYZ Life may be able to take on more investment risk than if downside was not shared. Nonetheless, it should not take on excessive levels of investment risk. **(1 mark)**
- When policy owners purchased their policies, disclosures would have been provided about how funds would be invested. XYZ Life would need to ensure it complied with these disclosures when determining its asset mix. **(1 mark)**
- Asset mix for investment account business and WoL would need to be sufficiently liquid to cover withdrawals or surrenders which can occur at any point in time. **(1 mark)**
- A long term strategic asset mix for participating WoL may include shares, property and fixed interest. An example may be shares 25% to 55%, property 10% to 30%, fixed interest 25% to 60%. **(1 mark)**
- A high level of smoothing combined with volatile assets will result in higher capital requirements. Taking into consideration cost of capital associated with guarantees on investment account business, asset mix may be less risky than participating WoL. High quality fixed interest assets and cash may be more appropriate. **(1 mark)**

(1 mark for any other valid point)

(Max. 5 marks)

(Total 12 marks)

b)

(i) Assets

Equities	Equity prices are likely to fall and volatility in returns is likely to increase. This could decrease the value of XYZ Life's equity portfolio. (1 mark)
Property	A slowing economy may lead to a decrease in property investment. As a result, property prices may fall and there may be increased default rates and/or rental yields may reduce. All of which would reduce the value of XYZ Life's property portfolio. (1 mark)

Cash	If the RBA reduces the cash rate in response to a slowing economy, return on fixed term deposits (i.e. cash) could reduce. (1 mark)
Fixed interest - Govt	<p>Poor economic outlook could lead to a downward shift in the yield curve, meaning lower yields on Government bonds and hence higher prices. Overall this would increase the value of XYZ Life's Government Bond portfolio. (1 mark)</p> <p>Alternatively, if Australia's credit rating declined then its borrowing costs would increase meaning higher yields on Government bonds and hence lower prices and depressed value of XYZ Life's Government Bond portfolio. (1 mark)</p>
Fixed interest - Corp	<p>Credit spreads on corporate bonds may increase due to increased risk of default which would decrease the value of XYZ Life's corporate bond portfolio. (1 mark)</p> <p>Some corporate bonds may be graded downwards (e.g from A rating to BBB) if the risk of default increases. This would increase the yield on these bonds which would push down their value. (1 mark)</p> <p>Some corporate bonds may default or be reclassified as junk leading to a significant drop in their value. (1 mark)</p>

(1 mark for any other valid point that is well explained.)

(Max. 1 mark per asset type)

(Total 5 marks)

(ii) Liabilities

YRT	<p>Claims cost is unlikely to increase significantly as a downturn in economic conditions is unlikely to increase mortality rates, apart from perhaps suicide rates, assuming suicide is not an exclusion. (1 mark)</p> <p>However, lapse rates on all types of insurance business may increase if cover is seen by policyholders as unaffordable. (1 mark)</p> <p>Where business lapses before acquisition expenses and commission have been recouped, XYZ Life would incur a loss on the policy. (1 mark)</p>
TPD	A downturn in economic conditions is unlikely to lead to a significant increase in total and permanent disability, however attempts to claim (i.e. claims applications) may increase. This would increase demand on claims resources, leading to increased expenses. (1 mark)
IP	<p>Unemployment and slower wage growth could likely lead to an increase in new temporary disablement claims, particularly around mental health and muscular skeletal issues. (1 mark)</p> <p>Claims duration is highly likely to increase as higher unemployment may mean there is no work for claimants to return to and/or earnings may not be as high as they previously were – both of which would provide an incentive to remain on claim. (1 mark)</p> <p>Similarly, if IP business becomes loss making due to, for e.g. lower than expected termination rates, capital would need to be drawn on to pay claims. (1 mark)</p>

Investment account	Withdrawal rates for investment account business may reduce as the likelihood of guarantees biting would increase and smoothing of crediting rates would make business appear more attractive. (1 mark) Capital may be drawn upon to support guarantees for investment account business. (1 mark)
WoL	Claims payments are unlikely to be significantly affected as these policies pay on death or maturity. Only possible impact would be to bring forward claims if and only if mortality rates increased. Customers may rely on policy loans and non-forfeiture provisions and cease paying premium which would impact on projected cash flows. (1 mark) Similar to investment account business, surrender rates may decrease as smoothing of bonus rates would make returns on this business appear more favourable in the short term. (1 mark)

(1 mark for any other valid point)

(Max. 1 mark per liability type)

(Total 5 marks)

(Total 10 marks)

c)

- Increase premium rates for existing and new business to cover the additional claims cost. **(1 mark)**
- Note: policyholders currently on claim for IP would be subject to a premium waiver, so increasing premium rates would not affect these lives. **(1 mark)**
- Improve claims handling practices, e.g. rehabilitation to help lives on IP claims return to work. **(1 mark)**
- Stop writing new business for unprofitable lines. **(1 mark)**
- Reduce crediting / bonus rates on investment account and WoL business. **(1 mark)**
- Review investment strategy in light of the change in market conditions, particularly as this is expected to be prolonged. **(1 mark)**
- Use derivatives to reduce downside risk, e.g put options to cap losses if equity markets fall. **(1 mark)**
- Reduce expenses through rationalisation of business lines and departments. **(1 mark)**
- Reduce or suspend dividend payments to shareholders. **(1 mark)**
- Seek external capital support from parent or markets. **(1 mark)**

(1 mark for any other valid point)

(Max. 8 marks)

(Total 30 marks)

END OF MARKING GUIDE QUESTION 2

QUESTION 3: MARKING GUIDE

a)

i) For each data point

- Look up mortality rates for smokers and non-smokers (1 mark)
- $E(\text{Number claims}) = q_x * \text{Policies in force}$ (1 mark)
- $E(\text{Amount claims}) = q_x * \text{Total sum insured}$ (1 mark)
- $A/E(\text{Number}) = \text{Number of claims} / E(\text{Number claims})$ (1 mark)
- $A/E(\text{Sum insured}) = \text{Amount of claims} / E(\text{Amount claims})$ (1 mark)
- Produce table of aggregated results (0.5 marks each, total 3 marks)

	A/E (Number)	A/E (Amount)
Non smoker	97.1%	97.3%
Smoker	99.9%	116.1%
Total	97.9%	102.6%

(Total 8 marks)

ii) Number of claims at age 35 for both smokers and non-smokers are very high relative to expectations and this is not reflected in the experience by amount of claims. (1 mark)

This may represent a very large number of small claims or a data error. (1 mark)

The number of claims for age 35 represents 1.5% of total number of actual claims therefore, if it is a data error, it is unlikely to distort the overall findings. (1 mark)

(1 mark for any other reasonable point)

(Total 3 marks)

b)

i) Totals

- At a portfolio level, actual number and amount of claims are broadly in line with expectation as A/E is around 100%. (1 mark)

Non-Smokers

- Overall actual experience for non-smokers in respect of number of lives and amount of claims is in line with expectations. (1 mark)
- Claim amounts for lives over the age of 45 are less than expected, however amount of claims for lives under 44 is higher than expected. (1 mark)

(Total 2 marks)

Smokers

- Actual claims amounts for smokers are much higher than expected, whereas the actual number of claims for smokers is broadly in line with expectations. (1 mark)
- This would suggest that policy holders with larger sums insured claim more than policy holders with smaller sums insured across most ages. (1 mark)
- This is particularly evident for smokers aged 45 to 55 years. This group of lives represents 23% of all claim amounts (1 mark)

(Total 3 marks)

ii) Premium rate adequacy

- At a portfolio level, A/E around 100% would suggest that best estimate mortality assumptions are reasonable, meaning assuming there are appropriate loadings for expenses and profit, premium rates adequately cover risk. (1 mark)
- However, when we look closer at A/E results by age for non-smokers we observe good experience for certain groups of lives (e.g. non-smokers aged 45 years and over) cross subsidising bad experience for other groups (e.g non-smokers aged 44 and less). (1 mark)
- This may represent an opportunity to lower premium rates for non-smokers aged 45 years and over, while increasing premium rates for non-smokers under 45. (1 mark)
- An implication of this finding is that we may be under charging for non-smokers under 45 years which could mean they may be selecting against us if our premium rates are lower or underwriting practices weaker than our competitors. (1 mark)
- The fact that smokers aged 45-55 with large sums insured appear to be claiming more than expected may indicate an issue with our underwriting bands or our large sum insured discounts. This should be investigated further. (1 mark)
- Nonetheless, it is unlikely that we would amend best estimate assumptions for pricing based on one year of experience. Instead we would monitor experience over a period of time and if this trend continues, assumptions may be revised. (1 mark)
- A competitor analysis of premium rates could help to identify if we are under-pricing or over-pricing in these areas where experience is poor or favourable. (1 mark)

(Max. 5 marks)

(1 mark for any other reasonable point.)

(Total 11 marks)

c)
Pros

- It will simplify the underwriting and claims management process which will help to reduce expenses. (1 mark)

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- It is likely to be viewed favourably with advisers and customers therefore LifeCo may write more business. **(1 mark)**
- This proposal could mean that applications are processed quicker and claims are paid quicker both of which would improve the customer experience. **(1 mark)**
- More broadly, this could help to improve public perception of the insurance industry and LifeCo's reputation. **(1 mark)**

Cons

- If other insurers do not offer similar terms, then LifeCo may be at risk of anti-selection whereby ill health lives attempt to purchase a policy with LifeCo if they would be declined or subject to an exclusion with another life insurer. **(1 mark)**
- There is a risk that claims costs will increase if LifeCo ends up paying benefits that would currently be declined. **(1 mark)**
- This proposal presents a greater risk to LifeCo of non-disclosure without recourse to correct this at time of claim, especially if lives avoid attending a doctor for a year for 'managed' illnesses that could increase mortality risk. Ultimately, this will increase claims cost. **(1 mark)**
- There is a risk that existing policy holders may attempt to lapse and re-enter if it means they could achieve better terms than their current cover. **(1 mark)**
- If actual claims cost increases materially, then best estimate mortality assumptions may need to be strengthened which could result in increasing premium rates. **(1 mark)**

(1 mark for any other reasonable point)

(Max. 8 marks)

(Total 30 marks)

END OF MARKING GUIDE QUESTION 3