LIFE INSURANCE AND RETIREMENT PRODUCT DEVELOPMENT

EXAM MARKING GUIDE SEMESTER 2 2019

MARKING GUIDE

This exam represents 80% of the available marks for the Life Insurance and Retirement Product Development subject.

Question	Module	Syllabus Performance Outcome and Learning Objective	Page Reference in Course Notes	Total Marks
1	M2 M3 M4 M7	1.2, 1.3 2.1, 2.2, 2.3 3.3 4.3	2.2.2, 2.2.3 3.2.1, 3.2.2 4.3 7.3.2	25
2	M6 M7 M8 M9	3.5.2 4.4 5.2.1, 5.2.2, 5.2.3, 5.2.4 6.1.1	6.1, 6.2 7.4.1 8.2.2, 8.4.3, 8.5.3, 8.6.1 9.2	25
3	M6 M8 M11	3.5.2 5.2.5 7.1.1, 7.1.2	6.1, 6.2, 6.5 8.7 11.3, 11.4	30
				80

Students who were successful at this exam will have demonstrated the following knowledge and/or skills:

- an understanding of level and stepped premium term insurance;
- an understanding of the reasons why premiums can increase for level premium term insurance and the distinction between guaranteed and non-guaranteed rates;
- be able to apply the screening component of the product development process to introducing a new stepped premium product;
- an understanding of differences in assumptions between level and stepped premium insurance and the impact of lapses on profitability;
- be able to describe the steps involved in developing a cashflow projection including preparing a decrement table, projecting cashflows, explaining assumptions, timing of cashflows, setting up reserves, and calculating transfer values;
- an ability to describe the steps of cashflow modelling in sufficient detail that someone could produce a simple model;
- be able to apply considerations when assessing the adequacy and suitability of premium rates;
- an understanding of the difference between modelling for model points versus a portfolio;
- an understanding of what needs to be considered when launching a new product in the market;
- an awareness of the checks that should be completed to assess accuracy and completeness of data before reviewing results;

- an ability to review experience data and identify trends without performing the calculations;
- be able to assess the impact of changes in the operating environment on morbidity experience and ability to consider what can be done about this;
- be able to apply and assess the appropriateness of different types of reinsurance to address trends in experience; and
- identification of risk and mitigation strategies relating to providing insurance cover for mental health conditions.

QUESTION 1: MARKING GUIDE (25 Marks)

a)
From: PricingActuary@smalllife.com
Sent: 10 October 2019
To: CustomersServicesManager@smalllifeco.com
Subject: Level premium term insurance

Dear Customer Services Manager

Thanks for your email.

Firstly, my team has investigated to make sure that the administration system is using the right premium rates in renewal notices and I can confirm that the increases are correct.
(1 mark)

There are a few different reasons why premium rates for level premium term insurance might increase. You'll need to look into each customer's account to see which situation applies.

- If the policy holder has increased their sum insured either voluntarily, by buying more cover, or automatic, for example by indexing to inflation, then their premium rates would increase. **(1 mark for voluntary, 1 mark for automatic increases)**
- There are two types of level premium term policies ("true level" and "non-true level"). True level calculates premiums for the indexed sum insured using the policyholder's age when the policy started. Non-true level bases premium rates on the policyholder's age at the time of the increase. **(0.5 marks)**
- For non-true level this means that different premium rates would apply to the sum insured at the start of the policy and the amount of the increase. To clarify this means the same premium rate would not be applied to the total sum insured. **(1 mark)**
- Even where there are no increases to the sum insured, it is possible that an individual's premium might increase if SmallLifeCo increases its premium rates for everyone. **(1 mark)**
- This would only occur where premium rates are not guaranteed. Whether or not premiums are guaranteed would be mentioned in the terms and conditions in the product disclosure statement. **(1 mark)**
- There would have to be a good reason for SmallLifeCo to increase its premium rates for non-guaranteed level premium business, for example SmallLifeCo has had a lot more claims than expected. **(1 mark)**
- It is important to remember that any increase to premium rates would affect all policyholders not just individual policyholders. **(1 mark)**
- If the actual terms and conditions are different to customer expectations, ie customers expect rates to be guaranteed when they are not then this suggests a breakdown in the sales process which would need to be looked into. **(1 mark)**

Please let me know if you need anything further.

Kind regards

Pricing Actuary

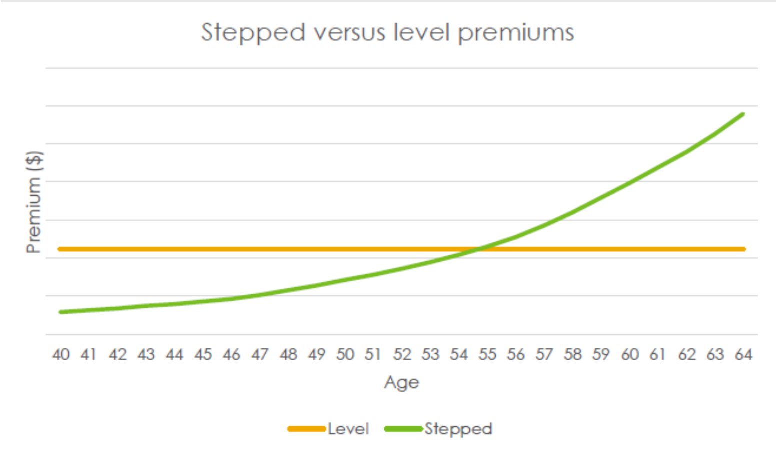
(1 mark each for any other reasonable point)
(1 mark for email format and appropriate language)
(Max 5 marks)

b)
Similarities between level and stepped premium term

- For both policies SmallLifeCo agrees to pay a lump sum benefit, that is the sum insured, if the life insured dies. In exchange the policyholder agrees to pay regular, e.g. yearly or monthly, premiums for the term of the policy. **(1mark)**
- Provided premiums are paid, SmallLifeCo promises to renew the contract each year regardless of whether the life insured's health changes. **(1mark)**
- Depending on the terms and conditions, SmallLifeCo may be able to increase premium rates for both level and stepped premium term at its discretion. For this to occur premium rates cannot be guaranteed. **(1mark)**
- If SmallLifeCo offers guaranteed premium rates then it is possible that it could offer a rate guarantee for a specified period for both level and stepped premium term insurance products. **(1mark)**

Differences between level and stepped premium term

- For level premium term, the policyholder pays the same or a level premium rate over the duration of the term unless SmallLifeCo increases its premium rates for everyone (if rates are not guaranteed) or the policyholder increases their sum insured. In contrast, for stepped premium term, premiums increase each policy anniversary in line with the way the risk of dying increases with age. **(1 mark)**
- Premiums for level premium term insurance may not be payable for the full duration of the contract which means costs relating to later durations would need to be built into premiums payable in the earlier years. A premium waiver period would not tend to apply to stepped premium term insurance meaning premiums would be payable for the full duration of the stepped premium contract. **(1mark)**
- Level premium policies may convert to a stepped premium policy at the end of the term unless the policyholder commences another level premium term insurance policy. Stepped premium contracts do not have this type of conversion option. **(1mark)**
- The diagram below might help to demonstrate the difference between premiums for stepped and level term. **(1 mark)**



(1 mark each for any other reasonable point)
(Deduct 1 mark if the student uses language that is not appropriate for the intended audience)
(Maximum 2 points each for similarities and differences)
(Max 4 marks)

c)

- The impact of lapses on profitability depends on the relative contribution of premiums, claims, expenses (including surrender values) and the release of reserves at the point when the policyholder lapses. **(1 mark)**
- When writing new business, providers incur costs for example underwriting and commission which need to be recovered through future margins. Higher lapses than expected early in the life of a policy can result in unrecovered initial costs for both level and stepped premium term insurance which can mean making a loss on the policy. **(1 mark)**
- This risk tends to be greater for stepped premium business as premium rates are comparably lower early in the contract. This results in initial costs being recovered much later, on average, for stepped premium term relative to level premium term. **(1 mark)**
- Customers who lapse early under level premium term will have paid more in premiums than their expected cost of claims. However, they may not have paid enough to cover expenses and commissions involved in writing the policy which is why losses can also occur for early lapses for level premium term. **(1 mark)**
- In contrast, for level premium term, it may also be possible for higher than expected lapses to improve profitability late in the term of the contract. This is because the expected cost of claims at advanced ages exceeds the amount of the level premium. In this case the release of reserve has a positive impact on profit. **(2 marks)**
- The only caveat to this would be if the surrender value payable on lapsing exceeded the value of the release of reserves. **(0.5 marks)**
- For stepped premium business, premiums increase quite sharply at older ages in line with increased claims cost. Affordability of cover can therefore drive higher lapses at later durations. If the reserves are negative (ie an asset) for stepped premium term then the release of this “asset” will reduce profits. **(1 mark)**

- All else being equal, stepped premium term insurance may be expected to have worse claims experience than level term premium insurance policies due to selective lapsation. Unhealthy lives who hold stepped premium term insurance are less likely to lapse when premiums increase at older ages as they are less likely to pass underwriting elsewhere and have more reason to believe they may need to claim in the future. Conversely, healthy lives who would pass underwriting may be able to shop around for cheaper rates. Therefore, differences in lapses between level and stepped may impact profitability by changing the claims profile of the portfolio. **(1 mark)**

(1 mark each for any other reasonable point)
(Max 6 marks)

d) ***See Section 7.3 in Module 7 (Product Development)***

i.

- After identifying and evaluating customer and provider needs, the next stage of the product development process involves developing a product strategy. The screening stage is the next step in this process after the development of the systematic identification of the idea. **(1 mark)**
- The product strategy stage of the product development cycle is broken into four steps: the idea stage, the screening stage, the proposal stage, and the initial decision stage. **(1 mark)**
- After product ideas have been generated, the screening step consists of examining each idea in further detail (albeit still at a relatively high level during the product strategy stage). **(1 mark)**

(Max 2 marks for i)

ii.

See Section 7.3.2 in Module 7 (Product Development)

There are several criteria to be examined during the screening stage, for example:

- Additional or new expertise is unlikely to be needed due to the similarities to level premium term, for example underwriting and claims will be similar. **(1 mark)**
- A stepped premium term insurance policy is likely to be in line with strategic objectives and risk appetite because it is not a significant deviation from a level premium product. The product is unlikely to introduce a material change to risk profile. **(1 mark)**
- Nonetheless, SmallLifeCo will need to think about how assumptions may differ from level premium term and if unsure consult accordingly. For example, lapse rates are likely to be higher for stepped than level at certain ages or durations. **(1 mark)**
- Also, there is a risk that healthy lives might lapse their level term policy in order to take up a stepped premium policy where premium rates are cheaper. This might impact the claims profile of the existing level premium book. **(1 mark)**

- Feedback from the Customer Services Manager indicates that there may be a market for stepped premium term given customers have requested it and other providers in MadeUpLand offer this structure. **(1 mark)**
- SmallLifeCo will need to consider its target market and whether demand exists within this market. For example, it may wish to target younger lives who may view stepped premiums as comparably more affordable. **(1 mark)**
- Focus groups based on the chosen target market could be used to assess whether the product is likely to generate expected sales volumes. **(1 mark)**
- Changes to administration and systems are unlikely to be significant. Some IT changes will be needed to differentiate between premium structures and to apply the appropriate premium rates to policies. It is unlikely that this would lead to a material increase in expenses and therefore unit cost assumptions. **(1 mark)**
- Product documentation, such as PDS and application forms will need to be updated to reflect the choice of premium rate structures and relative risks and benefits. **(1 mark)**
- There is no obvious reason to suggest that stepped premiums would not comply with the legislative and regulatory requirements in MadeUpLand. **(1 mark)**
- SmallLifeCo should investigate which other provided in the market offer stepped versus level premium term insurance and see what information is available publicly about their market share and/or premium rates. **(1 mark)**

(1 mark each for any other reasonable point)
(Max 8 marks for ii)
Total for d) 10 marks

END OF QUESTION 1: MARKING GUIDE

QUESTION 2: MARKING GUIDE (25 Marks)

a)

Expenses and commission

At this stage we have no reason to think that unit cost assumptions or commission would differ between level and stepped premium insurance. In the absence of contradictory information, it would be reasonable to use the same assumptions. **(1 mark)**

Underwriting, administration and claims processes for stepped and level term insurance are likely to be similar and so expenses related to these activities would be materially similar. **(1 mark)**

The effort required by an adviser or intermediary when providing financial advice should be the same for level and stepped premium term insurance. Therefore, it is reasonable to assume that commission rates would be materially similar for the two products. **(1 mark)**

We have not been given information as to whether level premium term insurance is priced on a fully allocated or marginal cost basis. We are only provided with % per premium unit cost assumptions, although the absence of $ per policy expense assumptions does not guarantee that level premium term insurance is marginally priced. We would need to check which expenses were included when deriving derivation of unit cost assumptions to confirm this. If an allowance for fixed expenses is included in unit cost assumptions then in the future we may be able to reconsider assumptions if total sales (across level and stepped premium term) increase enough to spread fixed costs over a larger base. However, until more information is known about expected sales volumes no change is proposed. **(1 mark)**

Claims

Assuming the underwriting process is similar for stepped and level premium term insurance then material differences in anti-selection are unlikely. Therefore, the same mortality table and selection effects could be used for both level and stepped premium term insurance. **(1 mark)**

Given stepped premium term insurance is a new product, then SmallLifeCo does not have credible experience from which to draw a conclusion about whether the portfolio of lives will have similar experience to lives that purchase level term insurance. For example, selective lapsation may be a reason why mortality experience might be heavier for stepped premium term insurance. Therefore, it may not be appropriate to carry over the 80% company experience factor which is being applied to the base table for level premium term insurance. A factor of 100% of the base table may be more appropriate for stepped premium term insurance at this time. **(1 mark)**

Lapse

Individual who purchase level term insurance may have a longer-term outlook towards cover (as they are prepared to pay higher premiums now for cheaper premiums later) and so overall lapse rates for level premium term insurance may be lower than stepped premium. **(1 mark)**

Also, the lapse profile is likely to differ between stepped and level premium term insurance. Lapses for stepped premium insurance are likely to be higher than for level premium insurance at longer durations / older ages as cover become more expense. **(1 mark)**

Investment returns
Level premium term insurance, particularly where the premium rates are guaranteed, has a longer duration than stepped premium term insurance as higher premiums paid earlier in the life of the policy need to be held back in reserve to pay claims later in the life of the policy. For this reason, assets backing level premium term insurance may be invested in more long-term assets. Conversely stepped premium term tends to be invested in short-term assess such as cash. **(1 mark)**

The investment return for level premium term is 5%. For stepped premium term a lower assumption is probably more appropriate. A rate commensurate to the current cash rate in MadeUpLand would be reasonable. **(1 mark)**

(1 mark each for any other reasonable point which is well explained. To max of 2 marks per assumption)
(Max 8 marks)

b)

- Calculate an effective mortality rate for each age allowing for the selection factors (i.e. dx = qx * 60% in the first year of the policy, dx+1 = qx+1 * 80% in the second year of the policy and dx+t = qx+t * 100% thereafter). **(1 mark)**
- Ensure the mortality rate selected and used in the model is consistent with age definition in the mortality table and the age definition for premium rates. **(1 mark)**
- Make an assumption about the relationship between lapses and mortality which is consistent with the way lapse rates assumptions have been derived in the experience analysis. For example, assuming lapses are not independent of mortality but are mutually exclusive (e.g. wx = lapse rate * (lx – dx)). **(1 mark)**
- Create a decrement table for all ages which includes lx, dx, wx and lx+1, where dx is the effective mortality rate and wx is the lapse rate for each year of the policy (i.e. lx+t+1 = lx+t – dx+t – wx+t). **(1 mark)**
- Check whether the sum insured is level or indexed to inflation and allow for this in projecting premiums, expenses and claims. **(1 mark)**
- Project premium cashflows using proposed premium rates (i.e prem rate for age x * sum insured/1000 * the number of lives in force from the decrement table at the start of the period). **(1 mark)**
- Project claims cashflows using the value for dx from the decrement table for the relevant age (i.e. dx * sum insured at each age). **(1 mark)**
- Project expense and commission cashflows (i.e. expense & commission assumption * premium rate * sum insured/1000 * number of lives in force at the start of the year). **(1 mark)**

- Make an assumption regarding the timing of cashflows, eg premiums payable at the beginning of the year and claims incurred and paid at the end of the year OR all cashflows payable in the middle of the year. **(1 mark)**
- Calculate reserves for each year based on the rules that apply to reserving in MakeUpLand. **(1 mark) (Note: do not award marks if student describes margin on service reserving as the question is not set in Australia).**
- Ensure the timing of reserves looks appropriate (e.g. reserve should be set up on commencement of the policy and released at the end of the policy). **(0.5 marks)**
- Apply investment returns to net cashflows (i.e. (inflows – outflows + reserves at the beginning of the period) * earning rate). **(1 mark)**
- Calculate the value of transfers as inflows – outflows – change in reserves (i.e. premiums – expenses – claims + investment returns – (reserve eoy – reserve boy)). **(1 mark)**
- Ensure that the direction of transfers is appropriate (e.g. negative transfer on day 1 due to new business strain from paying commission and acquisition expenses and setting up reserves). **(0.5 marks)**
- Ensure the timing of the change in reserves allow for reserves to be set up at policy commencement and that the change in reserves is released into profit at the end of the year. **(0.5 marks)**
- Perform some reasonability checks on your numbers to ensure there are no mistakes. This may involve obtaining peer review. **(0.5 marks)**
- State any assumptions that you make while developing your model and ensure your model is documented adequately. **(0.5 marks)**

(1 mark each for any other reasonable point that is explained)
(A student can only receive full marks if they cover all steps above which are assigned 1 mark (i.e. develop decrement table, project all cashflows, calculate reserves and calculate transfer values))
(Max 12 marks)

c)

- Calculate the net present value of transfer values (inflows – outflows – change in reserves) using SmallLifeCo's risk discount rate (otherwise known as the hurdle rate). If this net present value is greater than zero then the proposed premium rates meet the return required by SmallLifeCo's shareholders. **(1 mark)**

OR

- Calculate the internal rate of return (IRR) on transfer values otherwise known as the yield on transfers. Compare the IRR with SmallLifeCo's risk discount rate. If the IRR is equal to or greater than the risk discount rate then the proposed premium rates for the model point meet SmallLifeCo's required return. **(1 mark)**

Only award 1 mark for either description.

- We would need to confirm that the expense assumptions used contribute to both

marginal and overhead expenses in order to fully comment on premium adequacy.
(1 mark)

Other related points

- We cannot comment on whether the premium rates meet SmallLifeCo's pricing policy or standards without reviewing SmallLifeCo's pricing policy. **(0.5 marks)**
- Given the cashflow model relates to a male non-smoker aged 40 we cannot comment on the adequacy of premium rates for any other model points such as male smokers or females. **(0.5 marks)**

(Award 1 mark for any other comment that is reasonable)
(Max 2 marks)

d)

- Need to develop a full set of premium rates for all lives (ie females, all ages, smokers, non-smokers). **(1 mark)**
- Need to design model points for expected business and expected business mix assumptions in order to assess whether the full set of premium rates is likely to meet hurdle requirements at a portfolio level. **(1 mark)** In performing this analysis there may be an opportunity for cross subsidy if some model points are expected to be more (or less) profitable than others. **(1 mark)**
- Need to undertake competitor analysis to assess the marketability of the product and proposed premium rates. **(1 mark)**
- Undertake sensitivity analysis and/or scenario testing in order to understand the potential impact on profit if experience is not as expected. **(1 mark)**
- Would need to enter into a reinsurance contract in order to transfer insurance risk. May be able to extend reinsurance treaty arrangements for level premium term insurance to include stepped premium term insurance. **(1 mark)**
- Prepare a pricing report and get the necessary sign off for the proposed pricing structure before launching the product. **(1 mark)**

(Award 1 mark for any other point that is well explained)
(Max 3 marks)

END OF QUESTION 2: MARKING GUIDE

QUESTION 3: MARKING GUIDE (30 marks)

a) Students should identify at least 5 of the following questions (or other relevant questions) that should be asked of the analyst:

- where did you source the data?
- what checks have been performed to ensure the data is accurate and reliable?
- how does the summary compare to the previous experience investigation's results?
- how do the actual figures compare to other sources such as our annual report?
- are the years calendar or financial years?
- how was inflation applied to convert dollars into 2019 equivalent values?
- how were the best estimate assumptions derived?
- have the best estimate assumptions changed over this period in response to experience?
- what expenses have been included in the "expense" item?
- how was customer satisfaction measured?

(1 mark should be awarded for each relevant question provided. Award 1 mark for any other relevant point.)

(Max 5 marks)

b)

Below are 5 possible observations, potential drivers, likely impacts and responses to the experience.

Students should identify 3 possible observations, with max **3 marks** for each allocated as follows

- 1 mark awarded for the observation **(Max 3 marks)**
- 1 for potential drivers **(Max 3 marks)**
- 1 mark for likely impacts **(Max 3 marks)**
- 1 mark for each action **(Max 3 marks)**

1 mark for memo format and solutions being clear, well written and using non-technical language **(Max 1 mark)**

(Total 13 marks)

Students may also come up with other valid observations that aren't identified below. Award marks accordingly.

MEMO

To: Head of Valuations
From: Experience Actuary
Date: 10 Oct 2019
Re: Impact of changes to operating environment on experience for TPD

Following on from your request, please find below a table of information about TIU's recent experience for TPD and how these observations may be explained by changes in TIU's operating environment. I have also outlined a possible response we could take to address each observation.

Observation	Potential driver	Likely impact	Possible response
average sum insured has decreased over the 5 years	• lower average sum insured could be due to a change in mix to younger people with lower coverage needs • other two changes shouldn't have impacted average sum insured	• if expected profit set as a % of sum insured and claim experience for these lower sums insured is similar to other policies, this might reduce profitability of the business. This is because the total sum insured has also decreased	• Investigate decrease by sub-groups (e.g. by age as well as sex, smoker status, employment category etc) • review claims experience for lower sums insured to estimate likely impact on profitability
claims rate has been higher in the last 3 years	• early identification program (EIP) may be bringing claims forward • could also be driven by extra SafetyFirst claims	• impact will depend on whether higher numbers are due to a bringing forward of claims from EIP • impact also depends on whether EIP successfully lowers overall claim numbers (probably too early to tell yet)	• analyse impact on timing of EIP, and impact of SafetyFirst claims • legal review of TIU's liability for SafetyFirst claims • check claims process for EIP – claims correctly accepted? • check underwriting process updated to assess risk for younger members

claim acceptance rate has been higher in last 3 years	• higher claims acceptance through the EIP (as specifically chosen as likely TPD claims) – speeding up could be temporarily distorting claims acceptance rate • claims previously accepted by SafetyFirst may also have a higher acceptance rate	• higher claims acceptance rate could lead to higher customer satisfaction (hasn't yet happened though) • higher claims acceptance, particularly with higher claims rates, will increase claims costs and reduce profits	• review claims process - correct procedures being followed? • investigate claims acceptance rates by sub-groups (e.g. EIP, SafetyFirst and other claims)
average claim size has been significantly below average sum insured since 2017	• additional claims from SafetyFirst (e.g. workplace related injuries linked to individuals in riskier but lower paid jobs, with lower sum insured)	• lower average claim size for SafetyFirst claims would partly mitigate the negative impact of additional claims from this cohort	• investigate claims cost experience for different sub-groups (e.g. SafetyFirst v other claims)
Expense per policy has increased significantly from 2015	• EIP will have driven costs up due to additional case manager resources required	• if the EIP ultimately prevents some TPD claims, the lower claims costs may offset the higher expenses. Otherwise profit will be negatively impacted	• investigate the source of the expense increase • review the EIP to determine its costs v benefits and make a decision about whether to continue
average delay has reduced by 1.5 months since 2016	• EIP aimed to reduce claim delay, so likely to be a driver	• speeding up of claims will distort the claims experience for a period, making it look artificially high	• use this as a selling point to increase future sales volumes

	• change in reporting pattern shouldn't change profitability of TIU, except that bringing claims costs forward increases their present value

Regards
An Actuary

c)
Proportional

quota share reinsurance **(0.5 marks)**

- Given experience suggests worsening experience for smaller sum insured then a quota share arrangement may have helped smooth experience given the reinsurer would have been involved in all claims (in accordance with the cession rate, e.g. 90%), not just large sums insured. **(1 mark)**

surplus reinsurance **(0.5 marks)**

- Surplus arrangements help smooth adverse experience by capping the cost of claims at the retention level for each claim. Surplus tends to be helpful at reducing volatility where experience is adverse for large sums insured. Given TIU's experience for smaller sums insured has deteriorated then surplus may not have been as useful at smoothing experience if the retention was set at a level above these small sums insured. **(1 mark)**

Non-proportional

catastrophe reinsurance **(0.5 marks)**

- Claims arising from workplace and transport accidents (which prior to 2017 may have been covered by SafetyFirst) may impact a large number of people at once. Catastrophe reinsurance would therefore help to reduce the impact of claims related to such events (although it is not clear from the data whether such an event has occurred). **(1 mark)**

stop loss reinsurance **(0.5 marks)**

- Would have limited aggregate claims cost for TIU during a specified period, subject to the limit that was agreed with the reinsurer. This might have been useful for TIU given its volatile experience over the last 5 years and uncertainty about the impact of changes in its operating environment. However, for this to take effect aggregate claims over the period (e.g. year) would have had to be above the threshold otherwise TIU would have had to cover the full cost of claims. Specifically, if the limit was set at $260m per annum then the reinsurer would not have been involved in any claims. **(1 mark)**

0.5 marks should be awarded for each reinsurance option identified, and **1 mark** for a brief explanation of how each reinsurance option would smooth the experience for TIU.

Award a maximum of **0.5 marks** per type of reinsurance if the student does not link the description of the reinsurance to TIU's actual experience over the last 5 years.

(6 marks)

d)

(i) Risk	**(ii) Mitigation**
anti-selection risk: people who have a family or personal history of mental illness may be more likely to purchase the new TPD policies. **(1 mark)**	*underwriting processes:* TIU needs to introduce further questions in its policy application process to assess an individual's risk of suffering a mental health related TPD. TIU should also ensure its underwriting staff are appropriately trained in assessing these risks to reduce their exposure to anti-selection. **(1 mark)**
data risk: TIU is unlikely to have past data on mental health related diseases as this cover has previously been excluded (although policyholders may still have tried to claim for these conditions, possibly providing some limited data to analyse). This will make it more challenging to appropriately price for this additional cover. **(1 mark)**	*collecting data:* If TIU has no historical data on claim incidence rates for mental health related TPDs it will need to source this data externally to ensure any changes to premium rates are adequate but also fair to policyholders and competitive. To avoid the legal risk of illegally discriminating against people with an existing mental health condition, enough actuarial and/or statistical data will need to be used as a basis for repricing these policies. Data could be sourced from industry bodies, either in ThisPlace or in another jurisdiction that has more experience in selling TPD policies with these conditions included. **(1 mark)**
underwriting risk: TIU may not have experience or expertise in assessing an individual's risk of developing a mental health related disability. Currently screening would only occur at the point of	*reinsurance:* Reinsurance could be purchased to reduce TIU's exposure to poor claims experience as a result of incorrect assumptions about the additional risk mental health conditions create. Reinsurers

claim rather than the point of sale. This creates a risk that actual claims experience may be worse than expected. **(1 mark)**	are also a further source of data that may be used to help assess the addition claim risk these conditions pose. Reinsurers could also provide technical expertise in underwriting for these risks. **(1 mark)**
Mis-pricing risk: overall there is a risk that TIU's standard premium rates do not allow for the expected cost of claims relating to mental health conditions. More specifically this means than an individual may not pay enough to cover their expected cost of claims leading to underwriting losses. **(1 mark)**	*product design:* While the law prohibits TIU from excluding cover, where a mental health related pre-existing condition is identified, then premiums could be loaded to allow for the increased claims risk. Alternatively, limitations could be place on the amount of cover provided. TIU may also be able to defer a risk if recent history makes prognosis uncertain. Otherwise for extreme risks, TIU may be able to charge a non-refundable fee to cover the cost of developing appropriate loadings for the risk. Note: given the law is new and untested legal advice should be sought on the legality of these options. **(1 mark)**
reputational risk: TIU is expanding its definition for new policies only. This may be perceived as unfair for existing policyholders and creates a reputational risk for TIU, particularly if other insurers expand their definitions for both new and existing policies. **(1 mark)**	*competitor analysis:* whether this creates a reputational risk for TIU depends on how its competitors respond. TIU should monitor the market accordingly. At the same time TIU should undertake feasibility analysis on the risks, benefits and costs of expanding the definition for existing policyholders. **(1 mark)**
lapse risk: Existing policyholders who are in good health may choose to lapse their policy and purchase a new policy that provides this enhanced cover. Increases lapses could reduce TIU's profitability, especially if it results in a greater proportion of lives remaining who are in ill health. **(1 mark)**	*existing policyholders:* TIU could offer existing policyholders an option to expand their coverage to match that of new policies, for an additional premium and subject to meeting certain underwriting criteria. **(1 mark)**
legal risk: TIU has to be careful not to illegally discriminate against people with an existing mental health condition by excluding coverage for them or charging for their additional risk without sufficient actuarial and/or statistical data available to support these decisions. **(1 mark)**	*3rd party review:* obtain in house or independent legal advice to ensure the policy conditions and underwriting practices are consistent with the new law. **(1 mark)**

Students should receive **1 mark** for each risk and **1 mark** for each risk mitigation strategy identified if discussed well.
Award marks for any other risks and mitigation strategies that are well explained.

(Max 3 marks for risks, max 3 marks for risk mitigation strategies)

(Total 6 marks)

END OF QUESTION 3: MARKING GUIDE

END OF MARKING GUIDE