COURSE COVERAGE

Question	Units	Syllabus Performance Outcome and Learning Objective	Total Marks
1 (a) (i)	1	1.1.1, 1.2.3	1
1 (a) (ii)	1, 3	1.1.1, 1.2.3, 3.9.2	3
1 (b)	1, 2, 4	1.1.1, 2.5.3, 2.5.4, 4.12.1	3
1 (c) (i)	2	2.4.2, 2.5.3, 2.5.4, 2.7.4	6
1 (c) (ii)			4
1 (d) (i)	3	3.9.3	1.5
1 (d) (ii)			1.5
1 (d) (iii)	2, 3	2.5.3, 3.9.2	3
1 (d) (iv)	2	2.5.3	1
1 (e) (i)	1, 2	1.1.2, 1.2.2, 2.7.2, 2.7.3	3
1 (e) (ii)	2, 4	2.5.3, 2.7.4, 4.12.1	2
1 (e) (iii)			1
2 (a)	2	2.5.2	2
2 (b)	1, 2	1.2.4, 2.5.1, 2.5.5, 2.7.4	3
2 (c)	2	2.5.6	2
2 (d) (i)	1, 2	1.1.1, 2.4.3	2
2 (d) (ii)	1, 2	1.1.1, 2.4.3	4
2 (e) (i)	3	3.8.2, 3.8.3, 3.9.4	2
2 (e) (ii)	3	3.8.2, 3.8.3, 3.9.4	10
2 (e) (iii)	3	3.8.1, 3.8.2	5
3 (a)	1	1.3.3	3
3 (b)	2	2.6.1, 2.6.3	4
3 (c) (i)	4	4.12.1	4
3 (c) (ii)	1, 4	1.2.4, 4.12.2, 4.12.3	3
3 (c) (iii)	1, 4	1.2.4, 4.12.1, 4.12.2, 4.12.3	2
3 (d) (i)	4	4.12.4, 4.14.5	4
3 (d) (ii)	4	4.14.1, 4.14.2	2
3 (d) (iii)	4	4.12.4, 4.14.5	3
3 (e) (i)	3	3.10.3	3
3 (e) (ii)	3	3.10.3	2

MARKING GUIDE: QUESTION 1 (30 Marks)

a) i)

Annual premiums can be estimated as:

(Premium Rate per unit per week)
x *(Average units per member)*
x *(Number of members)*
x *(Annualising factor)*

Assume that:

- Few members have non-default cover. Hence, average units per will be approximately 4 (i.e. the default number).
- All current members of the fund have cover (no one has opted out or failed to meet eligibility requirements).

Thus, annual premiums can be estimated as:

(1.0) x (4) x (100,000) x (52.18) = $20,872,000

A range of answers are acceptable:

- Students may argue that the average units per member is marginally higher than 4 to allow for voluntary cover.
- They may argue that the total number of members is less than 100,000 to allow for ineligible or opt-out members.
- They may use other annualization factors (e.g. 52, 52.2, 365/7, 365.25/7)

Full marks should be given in these cases, assuming it is well argued and reasonable.

Marking Guide

- 0.5 mark for a reasonable assumption regarding average units per member (No mark if candidate fails to consider number of units per member).
- 0.5 mark for correct calculation of annual premium (No mark if candidate fails to consider the need to go from a per week to annual number).

$m figures rounded to 1 d.p (e.g. $20.9m) are acceptable.

Maximum of 1.0 mark.

a) ii)

Total $ of claims incurred = (annual premium) x (expected loss ratio) = 20.9m x 0.85 = $17.74m

This assumes that the expected loss ratio is in line with actual experience.

Total number of claims = ($ claims incurred) / (average claim size)

Average claim size = (average units per member) x (average SI per unit)

The average age at claim has been noted as 45, meaning that the average Death and TPD sum insured is likely to be around the average sum insured for default members around age 45 (i.e. 4 x $25k = $100k). This implies the total number of claims is approximately 177 per year.

Students may provide a range for their answer by noting issues such as 'mean' age at claim not reflecting the mean age weighted on sum insured, the sum insured changing between age bands, and the possibility of large, one-off claims due to voluntary cover. For example, they might suggest a range between 111 and 246 based on an average age between 40 and 55 when weighted by sum insured.

Regardless of the approach taken, justification should be given.

Marking Guide

- 0.5 mark for correct calculation of claim cost
- 0.5 mark for stating assumption that expected loss ratio = actual loss ratio
- 0.5 mark for correct calculation of claim number / range
- 0.5 mark for correct calculation of average claim size
- Up to 1.0 mark for explaining average claim size assumption used

$m figures rounded to 1 d.p (e.g. $17.7m) are acceptable. Claim numbers rounded to whole numbers are acceptable.

Students who bring forward incorrect premium or average unit per member assumptions from (a) (i) should not be penalised if it is correctly used in this calculation.

Maximum of 3.0 marks.

b)

The definition as provided is in line with the definition of permanent incapacity required within the Superannuation Legislation but candidates are not expected to know superannuation law but rather demonstrate knowledge of risk mitigation in group risk benefit design. TPD definitions typically seen in the Group Risk market include terms and conditions such as:

- Restrictions on what occupations / activities are covered or specifically excluded. TPD as a result of diving below 20m, working with high voltage or at heights, flying other than in a commercial aircraft, professional sports etc.

- A provision that individuals who have previously been paid a TPD benefit (from any source) are not eligible for TPD cover in this scheme.

- Exclusion of TPD as a result of self-inflicted injuries or whilst engaged in criminal activity.

- That the assessment of TPD be confirmed by two Registered Medical Practitioners chosen by, or acceptable to, the insurer (in the relevant area of specialisation).

- TPD cover is limited to events that occur within Australia (so cover does not apply to members when they are outside of Australia), or for events that take place outside Australia unless agreed with the insurer prior to undertaking overseas travel.

- Excluding cover for TPD whilst of extend periods of leave from work (usually > 1year) unless with prior agreement from the insurer.

- A requirement that the member is not in any other gainful employment.

- An allowance for severe conditions such as loss of limbs or significant paralysis (paraplegia, quadriplegia diplegia, hemiplegia).

- A restriction on how long the member would have to be absent from work before TPD would be assessed.

- A requirement that the member was in active employment either at the time of, or within a given period prior to, the event and that members that don't meet this requirement have to meet a more restrictive TPD definition.

- Provisions around attempted rehabilitation and reasonable retraining as part of the determination of TPD.

- An 'Activities of Daily Working' or 'Activities of Daily Living' style definition.

- A "cognitive impairment' style definition.

Marking Guide
- 1 mark for each item identified

Maximum of 3.0 marks.

c) i)

- **Cross Subsidies by Age, Sex, and/or other factors**
  While the sum insured is decreasing with age / risk of members, the same rate is charged for all members so there is likely to be cross subsidies within age bands, and probably between age bands and at younger ages where the sum insured scale is flat. It's also possible that the shape is not steep enough to capture the differing risks by Death and TPD separately by age.

- **Lack of Rating Factors**
  Age is not the only relevant rating factor. Gender and occupation are significant drivers of the risk of Death and TPD. A lack of rating factors exposes the scheme to deteriorating claims cost due to changes in the occupation / gender mix of the fund.

- **No differentiation of Cover by nature of employment**
  The Food and beverage industry has high incidence of casual and seasonal work which means members may only work for certain times during the year and total contributions may be insufficient to meet the annual insurance costs.

- **Flat Premium Structure / Unit Rated**
  A flat premium structure or constant price per unit across all members can result in adverse experience solely as a result of changes to the age/sex/occupation distribution of the membership. This premium structure is also likely to result in the creation of cross subsidies that are difficult to remove.

- **Cover Not Aligned with Insurance Need / Only Default Cover offered**
  The sum insured scale provides an equivalent level of Death and TPD sum insured for most age bands with the TPD cover tapering off as a member approaches retirement age. Arguably, younger ages (i.e. <25) have a larger need for TPD cover than Death cover due to a lack of dependants and higher lifetime costs if they become permanently disabled. Conversely, other members may have greater need for Death cover to provide for spouses, family, or incurred debts.

- **Commencement of Cover is linked to first SGC contribution by employer**
  Employers can take up to six months to make SGC contributions which means that a member may not be covered during their initial period of employment (potentially when the risk of injury at work is the highest). There is also a risk that if the employer does not pay any SGC contributions the cover will never commence. There is no mention of a facility for a member to ask for the cover to commence immediately.

- **Cover is not linked to continuing employment or payment of contributions**
  When a member changes employment they are likely to get new cover in the superannuation scheme related to their new employment, they may not be aware that they still have cover in place in this fund and that insurance costs will continue to be deducted from their account.

- **AAL = Default cover**
  This means that there are no lives underwritten in the scheme which may expose the scheme to strong anti-selection particularly when combined with the fact that there is no minimum employment duration to be eligible for TPD cover. Anyone who works in Food and Beverage, even if only for a short period, is automatically covered for TPD. AALs are usually set to reflect the size of a scheme as larger schemes will have less volatile experience, if the size of the scheme reduces a reduction in the AAL will result in every member requiring underwriting.

- **Transferability of cover**
  There is no details of any portability of benefits. If a member has cover elsewhere they should be able to transfer both their accumulated superannuation savings and insurance cover into this scheme. Similarly, if an individual chooses to move to a different fund, there is no provision allowing for transfer of cover out of the scheme (or continuation option).

- **Cover is on an Opt-out basis**
  A member may not be aware that they are automatically covered and that insurance costs are being deducted from their account resulting their account balance being eroded. As the Food and Beverage industry has a high proportion of casual and seasonal workers there is likely to be limited understanding of the implications of the default benefit design.

- **Cover is neither underwritten or subject to pre-existing condition exclusions**
  An individual may be aware of something to do with their health or lifestyle that will result / lead to them becoming TPD and may join the scheme in order to get access to the automatic cover resulting in significant anti-selection.

- **No differentiation of cover by level of salary / employment grade**
  The same level of cover is provided for all members regardless of whether they are junior staff or management. It is more likely that permanent staff in management positions will both have a greater ability to pay and a greater need for cover. By ignoring the level of wages, the fund is effectively taking a greater proportion of a lower paid individual's superannuation contributions.

- **"Education, Training and Experience" / "ETE" definition / interpretation**
  Within the food and beverage industry, the interpretation of "ETE" may be seen as inappropriate as waiters / kitchen hands / counter staff generally require little specialist knowledge or training and so the potential range of equivalent employment opportunities when evaluating TPD would be overly broad and thus the benefit hard to qualify for. For more senior / management roles, a large proportion of people in these roles started out in the industry doing waiting etc and so "ETE" would include much lower paid and unskilled roles compared to their currently role.

Marking Guide
Up to 1 mark will be provided for each issue identified and sufficiently explained. Other issues not noted above will be accepted provided they are reasonable. Half marks can be awarded for issues that aren't sufficiently explained.

Maximum of 6 marks

c) ii)

Students can suggest a range of amendments, some of which address more than one issue. Examples include:

- **Separate sum insured scale for Death and TPD**
  This could address issues like insurance needs, cross subsidies or insufficient cover. This change would allow for the shape of the cover across ages to differ between death and TPD better reflecting the relative risk for each benefit. This change may make it more difficult for members to understand what cover they have.

- **Include additional rating factors**
  Adding additional rating factors to the premium or sum insured scale, such as:
  - Occupation Type (e.g. White vs. Blue Collar)
  - Gender

  Would at least partially address potential cross subsidies but it will also require confirming the nature of a member's job upon commencement of cover. This change could also require a member to notify the fund if the nature of their occupation changes so that the insurance cost better reflects their ongoing current occupation. There is a risk that if a member changes to a higher risk role and does not notify the fund and then makes a claim, the benefit paid may be less than expected as the change in role is incorporated into the claim assessment / benefit payment. This is likely to impact most members in terms of being able to understand how much cover they have as well as the cost of that cover with some members paying more for cover (offset by others paying less).

- **Removal of Unit Rating**
  Allowing for different premium rates to apply per unit by age. This would allow the fund to better address any cross-subsidy issues and allow greater flexibility in the level of sum insured to reflect need rather than a constant cost. This will result in insurance costs varying between members and potentially adversely impact members who will be charged a much higher price.

- **Introduce insurance benefits that differ by category of employment**
  The scheme could require members / employers to identify if they are permanent full-time, part-time, casual or seasonal employees and establish different insurance scales / benefits for each category of membership and that benefits change / cease to reflect changes in categories of employment. There will be a need to specify how a member and their cover will change when the move between categories of employment. The definition of TPD and cost of the benefit could better reflect the difference between these different categories and the amount of cover and therefore premium at least partially reflect the amount of contributions paid per year. Members in casual or part time employment would likely experience a reduction in their level of cover but the level of erosion of their retirement savings would also be reduced. There will be a need to ask employers contributing SGC for employees to also include notification of any changes in nature of employment. If the benefit design determines the benefit based on the current employment status there will be a need to revise premiums and cover for members who have failed to notify a change in status as part of claims assessment.

- **Introduce a pre-existing condition exclusion**
  By including a pre-exiting condition exclusion the fund will reduce the potential for anti-selection behaviour in the membership of the scheme. There is potential for increased complaints / dissatisfaction from members if the pre-existing condition exclusion is poorly understood or badly implemented particularly where the cause of claim is completely unrelated to the pre-existing ailment.

- **Commencement of Cover**
  Where a member is making personal contributions and/or transferring other superannuation money into this fund allow the member the option to commence cover immediately on joining the scheme rather than wait for SGC contributions in respect of a member to be received by the fund. This change will provide greater certainty of cover for members joining the scheme but may require addition assessment to ensure there is no active anti-selection in the benefit design.

- **Offer additional voluntary cover**
  The scheme currently only provides a standard default level of cover to all members, by allowing members to apply for additional amounts of cover the scheme will give its members the ability to tailor their level of cover to match their needs. This additional voluntary cover is usually subject to underwriting so there will be a need to set up this function if it does not already exist. Members who take additional voluntary cover may be charged different rates for the additional cover and could result in the cost of insurance being in excess of 20% of their contributions. Where voluntary cover is taken out at different points in time there could be different underwriting assessment / loadings applied to different parts of the cover which would require a sophisticated administration system to properly administer.

- **Introduce different definitions of TPD for different categories of membership.**
  By better reflecting the nature of work and how it differs between casual and permanent employees in the definition of TPD the scheme should reduced anti-selective behaviour and better match the TPD definition to the nature of work undertaken. This could however confuse members as to what definition they are covered by.

Marking Guide
- 0.5 marks for each mitigation suggested, even if multiple mitigants are suggested for a single risk/issue, and;
- 0.5 marks for describing the impact to members for each suggestion (maximum 1 mark for each mitigation / impact pairing).

Students that discuss occupation type and gender rating factors as separate points can be awarded 2 marks (i.e. they can be treated as separate mitigations for marking purposes).

Maximum of 4 marks

d) i)

The immediate change in in-force premium will depend upon the number of members with account balances below $6,000 as the other changes relate to new members and when cover commences and will therefore not immediately impact the level of in-force insurance premium.

As the average account balance is $6k (0.6bn funds under management / 100k members) the potential is for there to be significant reduction in the in-force premium for the scheme,

A low account balance can be due to a member having only joined the fund recently, being a casual / seasonal worker and so contributions are limited, or having left the industry and so no contributions are being made. As premiums do not vary by age the reduction in premium will not be impacted by the age distribution of account balances.

If the fund wrote to all members prior to the implementation of the change and highlighted to those with account balances below $6k that their cover would cease unless they responded in writing this may slightly reduce the size of the fall but response rates in such situations are usually very low. It's likely that the drop in current in force premium will be in excess of 50%.

Marking Guide
- Up to 1 marks for explanation
- 0.5 mark for estimating current premium impact being around or higher than half of future in force

Maximum of 1.5 marks in total.

d) ii)

Whilst membership has been stable at 100k, it is noted that there are 3k new members a year. This implies 3% of members must also leave the scheme. Membership may cease due to death, TPD or transfer to another scheme. Once the new rules are brought in around 50% of members will have their insurance cover removed, if the level of member turnover remains the same and assuming that half of those members transferring to another scheme have no insurance cover in place, then this will reduce in-force premiums by around 3%.

If members can remain in the scheme after retirement (with no insurance cover) then the rate of decline in insurance cover will be marginally higher as some members cover ceases due to age.

As new members are likely to start with $0 account balances (i.e. roll-overs will be low). It's unlikely many members will grow their account balance to $6k by the end of the first year and so no insurance premiums will be received for these new members. It is unlikely for many members to request within the first 90 days of membership for their cover to begin before their account balance reaches $6k so this means that there will be almost no new cover in the first year to offset the reductions due to exiting members.

There is no facility for existing members who had their insurance cease due to a low account balance, to have their insurance cover reinstated.

This would imply around a 3% drop in in-force premium one year following the changes (on top of the 50% initial drop).

Marking Guide
- Up to 1 mark for explanation
- 0.5 mark for estimating reduction over the first year

Maximum of 1.5 marks in total.

d) iii)

- **Anti-Selective Opt-In**
  While it's unlikely that members generally will opt-in to cover, it is likely that members that are in ill health will opt to retain cover. This could lead to an increase in loss ratios following the change as claim costs will reduce by a proportion lower than premiums.

- **Impact of Cross-Subsidies**
  Similarly, cross subsidies within the fund by age will likely result in increased loss ratios. Younger members are more likely to have low account balances and be affected by the new terms, and would likely have lower loss ratios than older ages given the shape of the sum insured scale. The portion of members with below-average loss ratios would be more likely to have cover removed, raising the average loss ratio of the fund after the changes.

- **Member Behaviour**
  It is not clear whether lower or higher account balances would behave differently. Although, it is possible that those with lower balances would be more apathetic about their cover – particularly if their account balance growth has been hindered because they've transferred to another fund. If apathy is higher for lower account balances, this might have led them to have a lower loss ratio compared to higher account balances on average (after other cross subsidies have been accounted for).

- **Operational Issues**
  The removal of the cover for low account balances might lead to unforeseen operational issues. For instance, members close to the $6k cut-off or who have only recently had cover removed may end up being paid claims regardless of the terms (i.e. due to pressure from the Fund as an ex-gratia claim). This would raise loss ratios over a long term, albeit hopefully marginally.

Marking Guide
Up to 1 mark per sufficiently explained item. Other relevant points not listed above should be accepted.

Maximum of 3 marks in total.

d) iv)

Based on the reasons given for (d) (iii), it's likely that loss ratios will increase. This would require an increase in premium rates.

Outside of increasing loss ratios, the reduction in in-force would necessitate higher premium rates to account for increasing expense ratios (to account for fixed costs being spread over lower total premiums) and to account for operational and pricing risk margins that insurers may add to the new design.

Marking Guide
- 0.5 mark for comment regarding loss ratios, and;
- 0.5 mark for raising other items such as expense ratios or other relevant points.

Maximum of 1 mark in total.

e) i)

Risks the trustee should be aware of:

Strategic risks
- The trustee has identified concerns with inactive members and those with low salaries however the proposed rules seem to be somewhat broader in scope. It is unclear what investigations have been done and if any other potential causes of the problem have been considered (such as the lack of differentiation in the benefit design by nature of employment or linking of the amount of cover to the member's salary). There is a risk that the proposed changes will not address the underlying problem and could make the problem worse by increasing the cost of cover for members who opt to have the cover remain in place.

- If members do not support the proposed changes, there could be a significant reduction in membership once they are introduced which could reduce the viability of the fund.
- As the changes are expected to result in the need for premiums to increase the competitive position of the fund will reduce.

Operational risks

- The proposed rules will need to be included in the terms and conditions of the new life insurance policy so that the cover provided by the insurer reflects these new rules and care will be needed to ensure they remain consistent.
- The administration system will need to be changed to accommodate the new rules – with any system changes there are risks they are not done correctly.
- Given the short time frame before the new rules need to be in place the risk of error is greater due to time pressures, lack of adequate checking / testing before implementation.
- Any delays in the processing of contributions received by the fund and allocation to members accounts could result in the system deducting insurance costs before the contribution is added and if this causes the account balance to fall below $6k it would trigger the termination of the cover. Where a delay in processing results in cover ceasing this could make the fund liable to pay the benefit without any insurance in place.
- As members will have the right to request for insurance cover to remain in place there will need to be a new process developed to identify what members are at risk of having their cover terminated, how and when they will be contacted and how their response will be recorded in the system. Will the response apply indefinitely or will a member need to be contacted each time their account balance is likely fall below $6k. This will need to be decided before implementation can commence.
- If a member's response is not correctly recorded in the system then the fund could be liable to pay a benefit even though there is no insurance cover in place.
- The fund will need to clearly communicate that cover has ceased for a member which increase the costs.
- There is no consideration of whether a member can have cover reinstated if it ceases due to low account balance and what would be required to have cover reinstated. What happens with these members once their account balance exceeds $6k?

Reputational Risk

- Members, and their dependants who attempt to lodge a claim and are told that there is no benefit payable due to the cover having ceased may complain that they were not told of or did not understand the changes and believed the cover was still in place. This may generate negative media attention and damage the scheme's reputation.

Insurance Risk

- It is likely that members who opt to have the cover remain in place will on average be less healthy and this will result in higher claims and the need to increase premiums.
- Eligibility for a benefit will depend upon the determination of when the event that triggers the claim occurred. For some TPD claims, particularly where degenerative conditions are involved, there may be a degree of subjectivity in the determination. For members who have there cover automatically removed there will be an increased incentive to have the event date determined to be prior to cover ceasing. This can result in increase disputes and legal costs.
- The new rules will result in a significant decrease in the amount of insurance in place and as there will be less cover the volatility in claims experience from year to year is likely to

increase. Both the reduction in total premiums and the increase volatility will result in the need for insurers to increase their rates.
- As the impact on future claims experience will be unknown the scheme's past experience will have limited value in assisting an insurer to determine the right price to charge and will likely result in additional margins being added to allow for the risk that claims will worsen.

Marking Guide
- 0.5 mark for each risk adequately identified

Items not raised above which are reasonable are permitted.

Maximum of 3 marks in total.

e) ii)

Students may argue either way in terms of whether the proposed changes will materially improve on the erosion of account balances for CafeSuper members.

Successful students will notice that premiums are currently low (around $200 per annum per member, or less than 1% of salary for someone earning over $20k p.a.). Hence, they are unlikely to be a major contributor to account erosion for members permanently employed on a full-time basis.

The risk of erosion in this sense is more likely to be for members working casually/seasonally or who are currently inactive (i.e. those that have stopped contributing) and hence do not have regular contributions to offset premiums.

Marking Guide
- 1 mark for providing an opinion as requested, including explanation.
- 1 mark for relating the annual premium per member to account erosion.

Maximum of 2 marks in total.

e) iii)

Students should receive a mark for any reasonable suggestion that addresses either the risks in Question (e) (i) or their response to Question (e) (ii).

Examples include:

- Setting the account balance limit to a lower amount (e.g. $1k, or $500) to avoid impacting a large number of members unnecessarily,
- Using the time since last contribution as a trigger for insurance ceasing to better address account erosion,
- Slowly granting additional units of cover as account balance increases (i.e. starting with only 2 units of cover until a given account balance is reached) so that members retain cover which is appropriate given the size of their account balance.
- Changing eligibility criteria to exclude casual workers, although this may be hard to administer depending on what information is provided to the fund.
- Changing benefit design to take into account the nature of employment / level of salary.

Marking Guide

- 1 mark for any reasonable suggestion which is linked to an aforementioned risk or to the account erosion issue.

Maximum of 1 mark in total.

NOTE: 1 mark should be deducted from the total marks for Question 1 (e) for students that fail to follow the memo format requested (minimum total mark of 0 for question (e)).

END OF MARKING GUIDE QUESTION 1

MARKING GUIDE: QUESTION 2 (30 Marks)

a)

Medical underwriting involves determining whether the health of the life insured is in line with the standard risk within an aggregate risk pool and whether a premium loading or exclusion is required to allow for any material relative difference. For IP, this is important in terms of ensuring that the premium a policyholder is charged is both affordable (by excluding a condition that would otherwise require an excessive premium loading) and adequately accounts for any occupational, medical or health issues, hazardous pursuits or pastimes that would make them more likely to be off work (by applying a loading that reflects the relative morbidity).

Financial underwriting involves determining whether the amount of loss a life insured would suffer in the event of a claim is sufficiently high to justify the sum insured they are seeking and that there is no financial incentive for the life insured to claim (i.e. the life insured would not be better off). For IP, this is most important for Agreed Value policies which have pre-defined monthly benefit amounts and for self-employed high net worth individuals with complex financial structures and multiple sources of income, some of which may not be dependent upon the life insured's personal exertion (such as income from a partnership).

Marking Guide

- 0.5 mark each for describing medical and financial underwriting
- 0.5 mark each for describing how medical and financial underwriting are used in IP

Maximum of 2 marks in total.

b)

Risk mitigants employed by BankInsure may include:

- Product Terms:
  - Pre-existing condition exclusion,
  - Exclusions for certain causes of claim (Mental Health, Self-inflicted, attempted suicide, substance abuse, drugs other than prescribed, driving whilst over the legal limit, engaging in criminal activity or illegal acts, normal pregnancy),
  - Exclusions for hazardous pursuits / pastimes (hang-gliding, canyoning, professional sports)
  - Cover restricted to within Australia (benefit only paid whilst life insured is in Australia, not covered for claims resulting from events that occurred whilst outside Australia).
  - Offsets for any benefits received from statutory schemes (CTP, Workers Compensation) or other IP policies on the same life insured
  - Age restrictions (e.g. maximum age of 55 at sale)
  - Exclusions for certain occupations (e.g. self-employed, high risk occupations)
  - Limits on the maximum sum insured and replacement ratio available
  - Waiting periods to reduce the number of small claims
  - Benefit periods being linked to personal loan terms reducing risk of long term payouts / termination rate risks
  - Termination of Cover if unemployed for more than a short time
  - Required to be under the ongoing care of a registered medical practitioner acceptable to the insurer who certifies continued disability each month.
  - Other restrictions on the temporary disability definition

- Underwriting:
  - Must be Australian resident or citizen
  - Short-form underwriting (5 questions requiring yes/no answers) with cover offered only if all answers are no, otherwise decline.
  - Clearly describe the duty of disclosure and have the life insured sign they have read and complied with their duty.
  - Reliance on the financial underwriting performed by the bank in providing a personal loan (e.g. restricting unemployed or casually employed lives, confirming the salary and future earning capability).

- Other protections:
  - Some variation in pricing by simple factors like age, gender, or occupation
  - Offer limited to existing Bank customers who have certain attributes such as
    - salary paid to their account
    - good credit history
    - established savings record

Marking Guide
- 0.5 mark for each mitigation raised, restricted to:
  - A maximum of 2 marks for product terms,
  - A maximum of 2 marks for underwriting, and;
  - A maximum of 1 mark for other protections

Maximum of 3 marks in total.

c)

Reasons for reinsurance may include:

- Reducing their exposure to volatility in experience.
- Gain access to the reinsurer product, underwriting and claims management knowledge / support particularly in relation to income protection business
- Wanting to free up capital for other opportunities / limited availability of capital.
- Leverage the return achieved on shareholder equity
- Looking for an informed partner to help derive / verify their assumptions and provide additional insight into their portfolio.
- Given the relatively low retention proposed, it's possible they simply want to continue offering cover alongside the personal loan portfolio but have less interest in bearing insurance risk. This may be an alternative to white labelling.
- A review of BankInsure's risk appetite (either a change in the appetite or a change of view on the risk of the portfolio)

Marking Guide
- 0.5 mark for each item raised

Maximum of 2 marks in total.

d) i)

The following changes are likely required:

- Increase in the CFI (Cancel From Inception) lapse rate over the first few months. Direct insurance being sold with general advice might lead to a larger number of purchases being made without sufficient planning, resulting in more policyholders cancelling the cover before the end of the cooling off period.

- Higher year 1 lapses. Retail advice is sold by advisors and through a considerably more onerous underwriting process. It's less likely that policyholders in retail would lapse within the first year compared to direct business.

- A reduction in lapses after the second and third year. Voluntary lapses are less likely given that the BankInsure product design automatically ceases when the personal loans expire. These would count as discontinuances rather than lapses. If discontinuances were included, the rates would be sufficiently higher than retail.

- Potentially lower discrepancies between genders and ages, to the extent that the premium structure for a direct policy would likely be less granular than retail.

Marking Guide
- 1 mark for each item raised and sufficiently explained

Maximum of 2 marks in total.

d) ii)

The following changes are likely required:

- Removal or reduction in 'select' shapes within claim incidence rates. This acknowledges the lower level of underwriting that would be in place for BankInsure compared to an average retail policy.

- To the extent pre-existing condition or other claim cause exclusions are included in the product design, an allowance for a reduction in claims from these causes. This may introduce a new select shape, albeit different in magnitude and duration.

- Potential allowance for anti-selection given the lower granularity of premium bases and reduced underwriting requirements.

- Acknowledgement of any differences in occupation mix and sociodemographic factors. I.e. it may be necessary to increase claim incidence rates given that a more blue collar contingent would have access to insurance through a direct insurer (to the extent this isn't already captured in the claim incidence basis).

- Simplification of the basis to conform with the simpler product structure. E.g. adjusting for the removal of certain features in retail policies that remove waiting periods or increase the likelihood of claim. This could also involve removing some of the factors in the claim incidence basis that aren't relevant for direct business.

- Consideration of whether the lack of advice in selling the product would lead to lower claim volumes due to a lack of understanding of the product benefits. This would be impacted by BankInsure's processes with regards to personal loan management (i.e. they may have systems in place to advise customers who are late on repayments to consider submitting a claim).

Marking Guide
- 1 mark for each item raised and sufficiently explained

Maximum of 4 marks in total.

e) and f)

While the aggregate termination rate is mostly in line with the standard assumption by count, an analysis by amount (i.e. sum insured weighted terminations) or based only on claims that would be ceded to HRC reveals experience is worse than the standard Retail IP basis.

Further analysis reveals that:

- **Terminations are Lower for Higher Sums Insured at Almost All Durations**
  There could be a number of reasons for this experience:
  - Lower sums insured could be correlated with younger-aged claimants. This would naturally lead to higher termination rates for lower sum insured claimants which isn't accounted for in the basis currently.
  - Different occupation mixes between lower and higher sum insured policies may lead to different claim cause mixes. For instance, if lower sum insured policies are bluer-collar, they would have a higher accident claim rate which would result in a larger proportion of short term claims.
  - Lives with higher on-claim income have lower incentives to return to work as their discretionary income while on claim is higher.
  - Agreed Value policies tend to have worse termination experience as financial underwriting is performed at sale rather than claim time. This can result in higher replacement ratios and a lower incentive to return to work. This could be more prevalent amongst high sum insured policies since they have more bandwidth for wide variation in income between sale and claim.

- **Payment Ratios are Higher for Long Term / High Value Claims**
  It is not clear from the data exactly which drives this experience, as both can be rationalised:
  - Long term claims are correlated with sum insured, as per the point above
  - Payment ratios will tend to be lower at the outset of a claim due to offsets from sick leave
  - It's possible that wage growth over the life of the policy is higher for low sum insured claims. This would lead to higher offsets from part time or sick leave income at claim time given sums insured are determined at policy outset.

- **Termination experience worsened after 2014**
  Looking at termination experience for claims incurred after 2014 shows a significant worsening of termination rates at most durations.

  Further analysis shows that the number of claims reaching benefit expiry increased noticeably after 2014 and average sum insured in aggregate has increased over the investigation period. While increasing sum insured would naturally result in worsening termination experience in aggregate as per notes above, this does not fully explain the sudden increase – particularly when more recent incurred years are less developed and hence should naturally have lower benefit expiries than previous years.

  The most likely driver in the change would be the introduction of the Loan Closure Benefit payment. An analysis of the termination rates split by personal loan duration and by calendar year confirms this; terminations close to the personal loan expiry fell dramatically after 2014. This makes sense, as the Loan Closure Benefit would incentivise claimants close to the expiry of their personal loan to remain off work in order to get the 3-month benefit bonus.

Based on these observations, it isn't reasonable to adopt the existing Retail IP assumptions.

At a minimum, the assumptions should be set in line with the experience of claims which would be captured in the surplus arrangement. Since the model does not allow factors outside of disability month, this will need to be incorporated into the proposed assumption by weighting experience to the ceded sum insured. This would result in a termination rate basis similar to the proposal below:

Months Since Disability	Retail IP Basis	Proposed Assumption	Proposed Rate p.m.
1	0.0%		0.0%
2	20.0%	103%	20.6%
3	15.0%	85%	12.8%
4	10.0%	78%	7.8%
5	9.0%	75%	6.8%
6-11	7.5%	90%	6.8%
12-17	5.0%	90%	4.5%
18-23	4.0%	87%	3.5%
24+	3.0%	93%	2.8%

A better assumption set would also exclude the pre-2015 experience given the change in product design. This would result in a lower basis, similar to the proposal below:

Months Since Disability	Retail IP Basis	Proposed Assumption	Proposed Rate p.m.
1	0.0%		0.0%
2	20.0%	93%	18.5%
3	15.0%	81%	12.2%
4	10.0%	71%	7.1%
5	9.0%	84%	7.6%
6-11	7.5%	85%	6.3%
12-17	5.0%	76%	3.8%
18-23	4.0%	66%	2.7%
24+	3.0%	86%	2.6%

Students may opt to smooth their basis given the lack of credibility, particularly at later durations. An aggregate 85% of the standard basis would be the simplest interpretation, although this ignores the lower rates at later durations and the higher rate at month 2 which has a significant impact on claim costs. A better simplification would acknowledge this and potentially smooth over months 3+ instead.

In terms of the payment ratio assumptions, students should again base this on the surplus portfolio's experience. This should result in a payment ratio closer to 80%. The experience by year does not appear to be a significant factor, and favourable 2017 year experience would be related to the fact that claims in that year have not developed sufficiently to observe the higher ratios at later durations.

Payment Ratio	80%

Marking Guide part e)

- Up to 1.5 marks for proposing an appropriate termination rate basis
  - 0.5 mark for an assumption which is lower than the existing basis by a non-trivial amount
  - 0.5 mark for an assumption that has different ratio assumptions for early (e.g. month 2) and later duration experience
  - 0.5 mark for students who provide a basis that accounts for worsening experience post-2014 (i.e. an aggregate ratio of approx. 85%)
- 0.5 mark for proposing a payment ratio assumption which is higher than the existing assumption by a non-trivial amount (i.e. more than 77%).

Students that suggest that the existing assumptions can be retained or made more favourable than current should receive no marks for part e). Similarly, students that do not present the assumption in the requested format should receive no marks for part e).

Maximum of 2 marks in total for e

Marking Guide – Part f

- Up to 3 marks for identifying the need to analyse the experience under the surplus arrangement specified in the question and for correctly doing so.

- Up to 6 marks in total for discussion regarding sum insured experience
  - Up to 1 mark for identifying the impact on termination experience
  - Up to 1 mark for identifying the impact on payment ratios
  - Up to 3 marks for rationalising the observed experience (i.e. suggesting reasons for why this has been observed)
  - Up to 1 mark for explaining how this was incorporated into their final proposal

- Up to 6 marks in total for discussion regarding the impact of product changes
  - Up to 1 mark for identifying that post-2014 incurred year termination experience is worse
  - Up to 1 mark for identifying this coincides with product changes
  - Up to 3 marks for rationalising the observed experience (i.e. explaining how the product changes might affect experience or linking this to observed experience)
  - Up to 1 mark for explaining how this was incorporated into their final proposal

Maximum of 10 marks in total for Part f.

g)

Other analysis that would be useful to conduct with relation to incidence, termination, or offset experience would be:

- **Relationship between personal loan size / duration and claim experience**
  This could reveal trends in incidence, termination, or offset experience related to the behaviour of different policyholders in using their cover. If relevant, it could lead to differential pricing by personal loan size to better reflect the risk of different policyholders.

  To perform this analysis, exposure data that includes personal loan information would be required.

- **New Business Analysis**
  The analysis in part d noted that average claim size of claimants has been growing over time. Analysis of new business profiles may help to understand how the portfolio would change from the insurer's perspective over time.

  To perform this analysis, year on year sales profiles and exposure data would be required.

- **Claim management analysis**
  It's clear that termination experience differs by sum insured size. Having an understanding of how claims are managed – particularly longer term claims and for different sums insured – could provide a better understanding of these differences. It could also help inform how HRC defines treaty terms to mitigate risks for the portfolio.

  To perform this analysis, claim management strategy documents or face-to-face discussions with BankInsure's claim team would be required to better understand how the portfolio is managed.

- **Replacement ratio analysis**
  As per above, it would be useful to understand drivers for high sum insured experience being worse than other cohorts. Understanding the replacement ratio at claim and comparing this over time could help confirm trends in termination experience for future years.

  To perform this analysis, the pre-disability salary for claimants would need to be available in claim data.

- **Offset analysis**
  To understand the payment ratio experience, an analysis of the reasons for and size of offsets for different cohorts should be performed. This could drive a better understanding of future experience and also give HRC insight they could share with BankInsure to better manage the portfolio.

  To perform this analysis, detailed claim payment data – including individual transactions and offset data – would be required.

There are a number of generic analysis that could also be performed (i.e. claim incidence studies, cause of claim analysis, etc.).

Marking Guide

- Up to 1 mark for each reasonable proposal. For full marks, the proposal needs to include the data required and the reason for conducting the analysis.
- More generic analysis not specifically related to the question should also be accepted, but with a maximum of 0.5 mark per reasonable suggestion.

Maximum of 5 marks in total.

END OF MARKING GUIDE QUESTION 2

MARKING GUIDE: QUESTION 3 (30 Marks)

a)

APRA's role is in enforcing the Life Act; ensuring that the insurer meets their contractual obligations to policyholders. Their concern will be whether the long-term risks of the annuity have been adequately mitigated and planned for, and whether the capital and reserves held against policy liabilities are sufficient.

ASIC's role is in ensuring that the insurer provides an accurate representation of the product and that policyholders are adequately informed upon purchasing the annuity. Their concern will be around the nature of the advice being provided by staff and on the website, as well as the way the product is presented in policy documents and marketing material.

The ACCC's role is the consumer watchdog. Similar to ASIC, they will be concerned with the way the product is sold and marketed to consumers.

Marking Guide
Up to 1 mark for discussion of each regulator:
- 0.5 mark for outlining the role of the regulator
- 0.5 mark for noting their concerns with regard to the product.

Maximum of 3 marks.

b)

A high level investment mix for a lifetime annuity product would need to address the following investment needs:

- Some growth assets, given the long-term nature of the policy and the need to build up reserves for payments far into the future
- Protection against inflation, given monthly payments on the annuity are indexed
- Regular cashflows required to service annuity payments
- Some liquid assets to fund lump sum payments on death and cancellation

Inflation-linked fixed interest securities would provide a reasonable match to the cashflows of the policy and would mitigate inflation risks, so should be a large portion of the assets.

However, they are unable to match against the longevity risks of the policy. Equities could be used to help address this longer-term risk and provide some growth opportunities for the policy. Property is also a reasonable option, as it provides inflation protection and regular cashflows like fixed interest but with higher risk and a potentially higher return.

A small holding of cash could be used to meet death and cancellation benefits.

At a high level, the following asset mix would be reasonable:
- Equities 10-20%
- Cash 5-10%
- Property 5%-10%
- Remainder in fixed interest focusing on inflation-linked fixed interest where available (targeting 70-80%).

Marking Guide
- 0.5 mark each for noting the liquidity, cashflow, growth, and inflation risks of the policy
- 1 mark for a reasonable asset allocation being suggested
- 1 mark for a reasonable discussion of decisions regarding asset allocation

Maximum of 4 marks.

c) i)

The product is aimed at people entering retirement.

Their needs for the product are:

1) A cashflow stream that will ensure they can maintain their existing lifestyle once they finish working. This would include protection against inflation risk.
2) Protection against longevity risk. I.e. the risk that they outlive their savings.
3) Flexibility in terms of spending their retirement savings. For instance, it's common for retirees to want a holiday or to make a large purchase upon retirement.
4) In some cases, customers will want to leave their children or spouses with an inheritance upon death.

The policy meets the needs (1) and (2), assuming that the initial investment is sufficient and the rates offered are competitive. The discount offered for investing a large portion of retirement savings should help achieve this. Inflation of monthly benefits also helps to ensure that the cashflows do not become insufficient to maintain their living costs over time.

Need (3) is met by allowing the customer to determine what proportion of their superannuation savings to invest. Partial cancellation of policies also provides an avenue for customers to extract lump sums from their policy in the future, but at a cost in terms of ongoing cashflows.

Need (4) is partially met via the death benefit offered. Although, this is only true in the case that the policyholder dies earlier than expected. As the benefit is only linked to one life, the life insured, spouses of customers may be left with little or no funds with which to support themselves should the customer pre-decease their spouse. a benefit that was linked to joint life mortality may be a better design to address this.

Marking Guide
- 0.5 mark for each customer need identified, up to a maximum of 2 marks.
- Up to 1 mark for discussion of how the policy meets each of these needs up to a maximum of 3 marks.

Maximum of 4 marks.

c) ii)

Issues with the distribution model include:

- **Lack of Advice**
  Policyholders will be required to seek their own financial advice, as telemarketers will be restricted to general advice. Lifetime annuities are complex financial products which may not be suited to all members of the fund. This could lead to complaints / legal action if customer's expectations aren't met.

- **Volume-based Bonuses**
  Telemarketers will be remunerated based on salary, but with bonuses linked to the volume of successful referrals. Having an incentive structure based on referrals alone rather than metrics based on profitability, customer satisfaction, cancellation, or other measures related to ensuring the product is suitable for customers who eventually take up the offer could impact the sustainability of the product.

- **Online Sign-up Process**
  Requiring members to sign up online after receiving a cold-call may lead to a lot of lost referrals – both because of the disconnect between sale and sign-up, and because this is a relatively large investment. Customers may be more comfortable taking up the product if there was an agent or representative to guide them through the sale process.

- **Lag Before Sale**
  Telemarketers will be encouraging members to sign up when they are 'close to retirement'. It's likely that those closer to retirement already have plans regarding their superannuation. A longer lead-in time along with an option to defer the annuity could possibly result in higher take-up.

Marking Guide
Up to 1 mark per issue identified and explained.

Maximum of 3 marks.

c) iii)

Students may give any reasonable opinion which is well explained. Their answer may be influenced by issues such as:

- Generally low take-up of annuities (lifetime in particular) in the market currently,
- A perception within the general public that lump sum superannuation benefits are a right at retirement,
- The issues with distribution raised in answer c (ii) and other issues noted in c (i)

Marking Guide
- 1 mark for providing an opinion as requested.
- 1 mark for justifying it convincingly.

Maximum of 2 marks.

d) i)

The key assumptions for the pricing model will be:

- **Mortality Expectations**
  This will include both the rate of mortality and the improvement rate for mortality by age, gender, and other relevant factors. These are essential for determining the expected duration of policies in projecting the liabilities.

- **Investment Return Assumptions**
  The return on invested premiums / reserves will be a major determinant in the level of monthly payments that can be provided to customers.

- **Cancellation Rates**
  The rate of cancellation of the product – both partial and total – will similarly affect expected duration.

- **Take-up Rates**
  The take-up rate of the product, including the take-up rate of the premium discount offer. This will determine the level to which expenses are spread across policies and will also be used to justify the level of the premium discount.

- **Expense Assumptions**
  This would include sales costs (including referral bonuses) along with other costs required to manage the portfolio. They are important to the extent that they add to the liability of the portfolio.

Marking Guide

- 2 marks for identifying mortality and mortality improvements and explaining why they are important. For the full 2 marks, the importance of improvement rates should be highlighted.
- 1 mark for identifying investment return assumptions and explaining why they are important.
- 0.5 mark each for other assumptions identified and explained, including those not listed above, to a maximum of 2 marks.

Maximum of 4 marks.

d) ii)

Measures of profitability that incorporate the capital required to write the business (e.g. return on capital, internal rate of return, weighted average cost of capital, etc.) will be more appropriate for this product.

They are more appropriate than a simple 'profit margin' (i.e. e.g. net present value of profits on premiums) given the single upfront premium structure and long-term nature.

Marking Guide
- 1 mark for selecting an appropriate profit measure.
- 1 mark for explanation (e.g. need to reflect capital).

Maximum of 2 marks.

d) iii)

The size of the discount could initially be determined by:

1) Determining any differences in customer behaviour which would result in reductions (or potentially increases) in projected costs for those policyholders taking up the discount, and;
2) Determining to what extent profitability between discounted and regular policies can acceptably differ in order to provide the discount and potentially increase the volume of business sold.

Differences in customer behaviour would require taking a view on:

- To what extent partial or full cancellations would be higher for policyholders that use up a larger portion of their initial lump sum retirement benefit,
- To what extent expenses would be lower for these policies, given a larger premium base to spread fixed costs over, and;
- Whether there would be any offsetting impacts on mortality. I.e. self-selection of healthier lives in taking up the discount.

Following product implementation, experience could be monitored and the discount adjusted if take-up is higher/lower than anticipated or desired (e.g. reducing the discount if almost all lives are taking it up).

Marking Guide
- Up to 2 marks for discussion of how assumptions may differ between discounted and regular policyholders and how this could drive the level of the discount,
- Up to 1 mark for identifying that an element of the discount may need to be based on different profitability targets / elasticity, and;
- Up to 1 mark for any other relevant points / discussion.

Maximum of 3 marks.

e) i)

The expenses can be categorised into 'acquisition' or 'maintenance/claim' categories. This will help determine which expenses need to be projected over the life of a policy. In some cases, it may be reasonable to split the expenses across both categories as a portion of the expense will relate to acquiring and maintaining business.

An example categorisation would be as follows:

		Category	Reason
1	Call Centre	Acquisition	Only required during the sales phase. If the product was closed to new business, these costs would no longer be necessary.
2	Sales & Marketing	Acquisition	
3	Policy Administration	Both	There would be separate administration processes for new business and policy maintenance.
4	Claims Management	Maintenance	These items will be required over the entire life of the policy.
5	Finance and Actuarial	Maintenance	
6	Client Services	Maintenance	
7	Investment Management	Maintenance	
8	IT and System Costs	Mostly Maintenance	While some costs will be required in establishing or supporting new business, IT and general overheads will be expensed over the life of the policy.
9	Other Overheads (General Management, Rent, etc.)	Mostly Maintenance	
10	Product Development Costs	Acquisition	The initial development of the product will be a one-off investment which will need to be recouped across all future policies.

Marking Guide

- Up to 1 mark for describing the categorisation of expenses into an acquisition / maintenance / claim style attribution model.
- Up to 2 marks for categorising the various departments and for any explanation provided.

Maximum of 3 marks.

e) ii)

Within the categories laid out in e) i), there would be a need to separate costs into 'fixed' and 'variable' expenses.

Fixed acquisition costs would likely be applied as a fixed amount per policy at the outset. Variable acquisition costs could be applied as a % of upfront premium if it was considered appropriate for more resources being devoted to acquire high value policies.

Maintenance expenses would likely be applied as a % of monthly payments made or as a fixed amount per payment made. This would better capture how these expenses would change for the portfolio over future projected years.

Marking Guide

- Up to 1 mark for suggesting how acquisition expenses could be spread.
- Up to 1 mark for suggesting how maintenance expenses could be spread.

Maximum of 2 marks.

END OF MARKING GUIDE QUESTION 3

END OF MARKING GUIDE