QUESTION 3

Solution

a)

The financial implications of the proposed 20% increase in premium for both inforce and new business must be analysed, including covering the following:

- Expected profit margin as at December 2015, when the basis change occurs.

(0.5 marks)

- Allowing for future new business in the next three years (as an example), the expected progression of profit margins over the next three years.

(0.5 marks)

- New business profit margin with the new price to prevent further deterioration of overall profit margin in the future.

(0.5 marks)

- Expected profit margin as at December 2015, when the basis change occurs.

(0.5 marks)

- Sensitivity test whether the existing margin can withstand experience deterioration due to unforeseen events.

(0.5 marks)

- In particular, consideration should be given to the potential shock lapse rate that will occur due to the substantial premium rate increase.

(1 mark for shock lapse consideration, 0.5 marks for general lapse consideration)

(0.5 marks for each additional valid point on financial implications of the premium increase, up to 3 marks)

In relation to the implementation of the new Disability Income standard table, issues/considerations include:

- Adequate documentation on the implementation of the new basis into the valuation models, to ensure a suitable audit trail.

(0.5 marks)

- Ensure adequate testing is performed on the new valuation models to ensure the Appointed Actuary can sign off on the adequacy of policy liabilities for the 31 December 2015 valuation which will use these models.

(0.5 marks)

- Consideration of the capital implications of the new basis, given the higher incidence and lower termination rates implied for part of the portfolio.

(0.5 marks)

- Consideration of using reinsurance to reduce the potentially higher capital requirements as a result of implementing the new table, given Bambury Life currently doesn't have any reinsurance. The reinsurer can also provide useful insights, such as the lapse experience of other companies which have repriced as a result of adopting the new standard table.

(0.5 marks)

(0.5 marks for each additional valid point on the implementation of the standard table, up to 2 marks)

LPS320 on the proposed price increase prepared by the Appointed Actuary should be provided to Management and may also be provided to the Board to give them appropriate actuarial advise on the proposed changes to the product.

(0.5 marks)

Sales/Distribution team and Product team should be consulted ensuring the proposed price increase is not going to have a detrimental impact to competitiveness and future volume of sales (e.g. by considering how competitive the increased premiums are in the market).

(0.5 marks)

The IT team should also be consulted to understand whether there are any system and administrative issues with implementing the proposed price increases.

(0.5 mark)

The signoffs required in relation to the CEO's recommendation include:

- Signoff from the Auditors. Because the price increase is expected to occur 6 months later than the valuation date, it is important to consult and receive a written/verbal approval from the Auditors. To give comfort to the Auditors that it is reasonable to factor in a future premium increase, the company could:
    - Provide evidence that this pricing initiative is progressing well;
    - Provide written representation from management noting the commitment to increase premiums;
    - Submit a full appreciation of the financial implications, including consideration of potential shock lapses; and/or
    - Demonstrate transparency with the Board and the Board Audit Committee.

(1 mark for Auditor signoff – the main issue is that the proposed price increase is in the future, yet to avoid loss recognition this has to be factored in in the upcoming year end. The most important thing is to satisfy the auditors with this approach and that this point will be one of the essential requirement/evidence to receive sign-off. 0.5 marks if not explained well)

- Sign off from other key Finance stakeholders such as the CFO that they understand the financial implications of the premium rate increase.

(0.5 marks)

- Sign off from the Head of the sales/distribution/product, the Head of IT and/or the Head of operations/COO on the proposed premium increases, to esnure appropriate consideration has been given to the sales and administration implications.

(0.5 marks if not raised above that IT/Operations/Distribution should be consulted)

- Sign off from the valuation manager / head of the valuation team that suitable testing has been performed and the new models are ready to be used for valuations.

(0.5 marks)

(0.5 marks for each additional point on sign offs with suitable description, up to 2 marks. Maximum of 0.5 marks for new table implementation-related signoffs)

Marking Guide
Marks as specified above, including up to 0.5 marks for additional valid issues or arguments, to a maximum of 8 marks.

b) Claim experience item in AOP = Expected claim cost *less* the Actual claim cost (including increase in IBNR and RBNA reserves over the period for both Expected and Actual).

(0.5 marks for claim experience definition)

Various components of the total claim cost are as follows:

- Expected or actual $ amount of DII benefit paid to claimants during the period. They are generally the monthly sum insured with applicable offsets (such as Workers Comp or policies hold with other insurers).

(0.5 marks)

The expected payment will increase due to expected new claims during the period which are expected to result in a $ claim payment. No changes to actual $ amount of DII benefit payment.

(0.5 marks)

- The expected or actual $ amount of DII benefit payable to claimants during the period.

(0.5 marks)

The expected amount should be offset by an expected release in Claims in Course of Payment (CICP) reserve of the same amount. The expected release in CICP reserve will increase by the same amount to offset increase in expected payment in the period. No changes to actual release in CICP reserve.

(0.5 marks)

The actual $ amount of DII benefit paid to claimants during the period should be mostly offset by actual release in CICP reserve as a result of unwinding of the expected benefit payable during the month. The offset may not be exact because of various reasons such as legal settlement for any in dispute claims.

(0.5 marks)

- The expected or actual release in CICP reserve due to benefit payable.

(0.5 marks)

The expected release should also be very close to the actual release in CICP reserve. This could be different if there are any data changes that have not been allowed for in the expected (for example, changes to the event date, as more accurate information becomes available).

(0.5 marks)

- Expected or actual increase in CICP reserve for policies that were still on claim since the beginning of the period.

(0.5 marks)

- There will be one period increase in claim inforce duration and will be based on the same number of remaining payments. In other words, excluding the impact of the release in CICP reserve due to the current period benefit payable. This is most likely to be an increase as now the claims have been inforce for another month; the termination assumption will hence reduce, resulting in a higher CICP reserve.

(0.5 marks)

- With the new DII tables, the increase to continuing claims will be more significant as the termination assumption differ significantly from Bambury's current basis – with much lower termination rates in the new table for claims beyond a five year duration.

(0.5 marks)

- Expected or actual decrease in CICP reserve due to policies been terminated during the period.

(0.5 marks)

As the overall CICP reserve will increase quite significantly after adopting the new DII table, the expected and actual release in CICP reserve will hence be more material.

(0.5 marks)

- Expected or actual increase in CICP reserve due to new claims since the start of the period.

(0.5 marks)

Expected increase in CICP reserve will be larger than before after adopting the new DII tables as the incidence rates will project more potential new claims. With every new DII claim, the new DII table will result in a larger increase in CICP reserve for every claim as a result of generally lower termination rates.

(0.5 marks)

(0.5 marks per component of the claim experience AOP item identified and an additional 0.5 marks for correctly describing the impact, up to a maximum of 6 marks)

After the implementation of the new standard table, overall the claims experience loss/profit should be smaller if the new basis more accurately reflect Bambury's actual experience.

(0.5 marks)

Marking Guide
Marks as specified above, up to a maximum of 6 marks.

c)

The total expected profit margin release in 2016 will reduce by 45% after allowing for the increase in premium and the new DII table.

Let the half year premium (expected based on existing premium rates) earned be y.

Profit margin release reduction = 1- ((y+y*1.2)5%)/(2y*10%)
= 1- (2y1.1*5%)/(2y*10%)
= 1- 1.1*0.5
= 45%

(0.5 marks for indicating expected profit in 2016 will be lower as a result of the basis change. An additional 1 mark for quantifying the 45%, or 0.5 marks if the timing of the premium increase for 1 July 2016 is disregarded. Up to 1.5 marks)

The above assumes the premium earned is spread equally throughout the year and assume no shock lapses. However, 45% will increase if shock lapses are taken into account as 1.2y will have to be reduced (e.g. by applying a 95% factor if you assume 5% shock lapse).

(0.5 marks for mentioning effect of shock lapses [must be shock lapses], 0.5 marks for a valid quantification of this)

Both the actual and expected claim cost will increase by the same amount if experience is exactly same as expected except for $ amount paid in the period (item 1 below) and reserve release on the $ amount paid in the period (item 2 below). However item 1 and item 2 should broadly offset, hence no distortion to expected profit in 2016 if experience is exactly same as expected).

	Changes after adopting the new DII table	**Expected Claim Cost**	**Actual Claim Cost**
1	**$ amount paid in the period**	Increasing in claim cost	No change
2	**Reserve release on the $ amount paid in the period**	Increasing in claim cost	No change
3	**Increase in CICP due to continuing claims**	Increase in claim cost	Increase in claim cost
4	**Reduction in CICP due to termination claims**	decrease in claim cost	decrease in claim cost
5	**Increase in CICP due to new claims**	Increase in claim cost	Increase in claim cost

(Expected Claim cost impacts – up to 0.5 marks)
(Actual Claim cost impacts – up to 0.5 mark)

If the actual experience is worse than expected due to a greater volume of new claims (as an example), then the experience loss will be of a larger magnitude than before.

(0.5 marks)

Other points:

- The expected maintenance expense will increase as the expense assumption is also applied to the number of claims in course of payment and the number of claims in course of payment will be higher using the new DII table. The new DII table and the premium increase will have no impact to the actual maintenance expense, and hence there will be a maintenance expense experience profit (all else being equal).

(0.5 marks)

- The new DII table and the premium increase will have no material impact on other experience items in the Analysis of Profit such as lapse, premium and commission for example.

(0.5 marks)

- Assume everything being equal, changes to the expected profit in 2016 post premium increase and with the new DII table = the reduction in planned profit + larger experience loss or profit if actual experience is worse than expected + better maintenance expense experience. Depends on the interactions of the above three components, the expected profit in 2016 may be either worse or better than expected profit before the change.

(0.5 marks)

(0.5 marks for each other valid point, up to 1.5 marks)

Marking Guide
Marks as specified above to a maximum of 4 marks.