Report to ECC from the Board of Examiners

SEMESTER 1 2018

PART III

BOARD OF EXAMINERS' REPORT

Publisher
The Institute of Actuaries of Australia
ABN 69 000 423 656
Level 2, 50 Carrington Street
Sydney NSW 2000
Tel: +61 (0)2 9239 6100, Fax: +61 (0)2 9239 6170
www.actuaries.asn.au

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CHAIR'S REPORT SUMMARY

1. Examinations

The Semester 1 2018 Part III examinations of the Actuaries Institute ("Institute") were held from the 23rd April to the 4th of May 2018.

2. Pass Rates

The number of candidates presenting for the Semester 1 2018 Part III Exams, the number of passes and the resulting pass rates are shown in the table below, together with the corresponding numbers for the previous two exam periods.

Pass Rates by Part III Course

	2018 (1)			2017 (2)			2017 (1)		
	Sat	**Pass**	**%**	**Sat**	**Pass**	**%**	**Sat**	**Pass**	**%**
2A Life Insurance	78	22	28%	62	23	37%	65	13	20%
2B Life Insurance	57	19	33%	49	15	31%	52	18	35%
3A General Insurance	108	17	16%	91	24	26%	92	23	25%
3B General Insurance	56	17	30%	53	21	40%	73	33	45%
5A Invest. Man. & Fin.	n/a	n/a	n/a	21	3	14%	n/a	n/a	n/a
5B Invest. Man. & Fin.	26	5	19%	n/a	n/a	n/a	33	7	21%
6A GRIS	19	8	42%	n/a	n/a	n/a	20	7	35%
6B GRIS	n/a	n/a	n/a	20	7	35%	n/a	n/a	n/a
ST9 ERM	101	38	35%	97	26	27%	104	43	41%
ST1 Health & Care	18	8	44%	19	5	27%	20	7	35%
C10 CAP	80	43	54%	95	58	61%	90	37	41%
Total	**543**	**177**	**33%**	**507**	**182**	**36%**	**425**	**138**	**34%**

The assessment for this semester comprised 10% online forum participation and 90% for the examination (three long answer questions).

The Chief Examiners aim to produce a consistent standard of passing candidates, rather than a consistent pass rate from year to year. The overall pass rate for this semester is 33%, which is lower than the 36% pass rate for the previous semester and the 34% pass rate for Semester 1 2017.

The pass rate for C3A continues to remain consistently low. The view of the Board of Examiners is that this is at least partially driven by this being one of the first of the Part 3 subjects that most candidates sit. The pass rate for C2A decreased significantly but remains higher than levels for Semester 1 2017.

Fellows

The number of members that will be made Fellows (subject to attendance at a Professionalism Course and paying any relevant exemptions) will be:

Number of Fellows

2018 (1)	2017 (2)	2017 (1)	2016 (2)	2016 (1)	2015 (2)	2015 (1)
27	39	30	37	32	29	29

Online Forum Participation

The online forum participation continued for all Institute delivered courses this semester except for C10.

Students are required to post 2 original posts and 4 replies. A participation mark was awarded based on the quality of these posts.

The following table provides a distribution of the participation marks received by students (who sat the exam):

Frequency Distribution for Semester 1 2018

Participation	Subject						
Mark	2A	2B	3A	3B	5B	6A	Total
10	18	31	60	16	24	10	159
9	30	15	19	26	0	3	93
8	11	6	23	9	0	4	53
7	5	0	2	1	0	0	8
6	1	0	0	0	0	0	1
5	1	0	0	2	0	0	3
4	0	2	0	1	2	0	3
3	0	0	0	0	0	0	0
2	1	0	1	0	0	1	3
1	0	0	0	0	0	0	0
0	2	3	4	0	2	1	12
No. of Candidates	**79**	**57**	**109**	**56**	**26**	**19**	**346**
Average Mark	**7.4**	**8.8**	**8.9**	**8.7**	**9.5**	**8.4**	**8.5**

Observations:

It was noted by multiple chief examiners that the forum mark was not a useful form of assessment in determining whether a candidate passes or fails and that they were glad to see it being replaced with assignments.

EXAM ADMINISTRATION

1. Course Leaders

Course Leaders are appointed by the Institute to undertake a variety of tasks relating to modules 1-3 of the Part III education program. Course Leaders draft examination questions, conduct tutorials, monitor forums and assess the online participation mark. The following is a list of the Course Leaders for this semester:

Course	Roles
2A	Exam: Georgina Hemmings Tutorials, Forum Participation: Bruce Thomson
2B	Exam: Ashley Wilson, Peter Corbett Tutorials: Gregory Bird Forum Participation: Han Gan
3A	Exam: Daniel Lavender Tutorials: Jeff Thorpe Forum Participation: Jacqui Reid
3B	Exam: Jacqui Reid Tutorials: Ben Qin Forum Participation: Mathew Ayoub
5B	Exam: Charles Qin, Claymore Marshall Tutorials, Forum Participation: Marlon Chan
6A	Exam, Tutorials and Forum Participation: Vivian Dang
CAP	Exam: David Service, Vivian Dang, Young Tan, Colin Priest, Tim Gorst, Gaurav Khemka Post-Course Assignment: Naomi Edwards, Andrew Gale, Colin Priest, David Service
ST9	This course is run completely external to the Institute.
ST1	This course is run completely external to the Institute.

2. The Board of Examiners

The Board of Examiners oversee the Part III examination process of the Actuaries Institute. The Board of Examiners consist of the Chair and the Chief Examiners for each subject, supported by Institute staff.

The constitution for the Board of Examiners for this semester was as follows:

2.1. BoE Chair

Chair James Pettifer

2.2. Chief Examiners

Course 2A:	Life Insurance	Anthony Brien
Course 2B:	Life Insurance	Danny Bechara
Course 3A:	General Insurance	Daniel Lavender
Course 3B:	General Insurance	James Fitzpatrick

Course 5B:	Investment Management & Finance	Charles Qin & Claymore Marshall
Course 6A:	Global Retirement Income Systems	Stephen Woods
Course 10:	Commercial Actuarial Practice	Bruce Thomson

2.3. Assistant Examiners

The Assistant Examiners for this semester were:

Course 2A:	Life Insurance	Alice Troung & Julian Braganza
Course 2B:	Life Insurance	David Ticehurst & William Zheng
Course 3A:	General Insurance	Ryan Anderson & Andrew Teh
Course 3B:	General Insurance	Elaine Pang & Chao Qiao
Course 5B:	Investment Management & Finance	N/A
Course 6A:	Global Retirement Income Systems	Jim Repanis
Course 10:	Commercial Actuarial Practice	Matthew Ralph

I would like to take this opportunity to thank all the members of the Board of Examiners and their assistants for their efforts in preparing and marking the examination papers. The management of the examination process is an extremely important function of the Institute and it is currently being run by a small group of committed volunteers.

2.4. Meetings of the Board

The Board met on three occasions this semester as part of the exam process as follows:

Meeting	Purpose
18 January 2018	• Update on enrolment numbers and course offerings for this semester. • Identify Chief & Assistant Examiners and Course Leaders for each course for this semester. • Outline the responsibilities of Chief Examiners and this semester's schedule. • Review progress on the drafting of the exams to date
23 March 2018	• Discuss the status of this semester's examination papers, model solutions and sign-off process. • Discuss the marking spreadsheets and review the recruitment of markers.
8 June 2018	• Review the recommended pass lists and treatment of borderline candidates.

2.5. Scrutineers

The Scrutineers for Semester 1 2018 were:

Course	Longer Answer Questions, Case Study Assignment and Exam
Course 2A	Claire Greenwell, Pallav Bajracharya, Daniel Lee
Course 2B	Lwarence Ng, Charlene Yong and Oliver Li
Course 3A	Samuel Chu, Angel Xu
Course 3B	Michael Di Pilla, Michael Storozhev, Kelly Lee
Course 5B	Daniel Troung, Leon Guo, Aniket Das
Course 6A	Young Tan, Stuart Mules, Kate Maartensz
Course 10	Phin Wern Ting (Life Insurance) Lawrence Uy (Investments) Roman Kashkarov (Health) Akshay Basrur (GRIS) Sophia Liu (General Insurance) Roman Kashkarov (ERM) Gautham Suresh (ESG) Stephen Edwards (Banking) Wan Wah Wong (Data Analytics)

3. Exam Administration and Supervision

The Board of Examiners was ably assisted by Institute staff in the Education Team, Tony Burke, Karenna Chhoeung, Carolina Vilches, Eleanor Mazando and Ausa Chanthaphone. They were responsible for administering the entire process and ensuring key deadlines were met, compiling and formatting the examination papers, distributing material to candidates and to exam centres, processing results and collecting historical information to produce this report. They did a great job and the Board of Examiners team is indebted to them all.

The Part III examinations were run by an external consultancy – Cliftons, a computer training venue.

Other examinations in temporary exam centres were administered by Fellows or other approved supervisors.

4. Exam Candidature

Candidate Mix

The mix of courses sat by candidates is broadly similar to that in previous years

Candidate Mix by Part III Course

Subject	2018 (1)	2017 (2)	2017 (1)	2016 (2)	2016 (1)	2015 (2)	2015 (1)
Life Insurance	32%	29%	27%	28%	31%	27%	32%
General Insurance	38%	37%	39%	41%	38%	35%	37%
Investment Management & Finance	6%	5%	8%	11%	8%	13%	6%
Global Retirement Income Systems	5%	5%	5%	4%	4%	4%	5%
Commercial Actuarial Practice	19%	24%	21%	16%	19%	21%	20%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

BoE Members for Semester 2 2018

1. Board of Examiners

The composition of the Board of Examiners for next semester, Semester 2 2018, is as follows:

1.1. Board of Examiners Chair

James Pettifer

1.2. Chief Examiners

Course 2A: Life Insurance	Anthony Brien
Course 2B: Life Insurance	William Zheng
Course 3A: General Insurance	Daniel Lavender
Course 3B: General Insurance	James Fitzpatrick
Course 5A: Investment Management & Finance	Charles Qin & Claymore Marshall
Course 6B: GRIS	Stephen Woods
Course 10: Commercial Actuarial Practice	Bruce Thomson

1.3. Assistant Examiners

Course 2A: Life Insurance	Julian Braganza, Jun Song
Course 2B: Life Insurance	David Ticehurst, Robert Herlinger
Course 3A: General Insurance	Ryan Anderson, Andrew Teh
Course 3B: General Insurance	Chao Qiao, Elaine Pang
Course 5B: Investment Management & Finance	N/A
Course 6A: GRIS	Jim Repanis
Course 10: Commercial Actuarial Practice	Matthew Ralph

2. Examination Dates

The dates for the examinations in Semester 2 2018 are as follows:

Module	Subject	Exam Date
1	ST9 Enterprise Risk Management (IFoA)	Thursday, 20 September
1	ST1 Health & Care (IFoA)	Friday, 28 September
2	C3A General Insurance	Monday, 8 October
3	C3B General Insurance	Tuesday, 9 October
2	C2A Life Insurance	Wednesday, 10 October
3	C2B Life Insurance	Thursday, 11 October
3	C5A Investment Management & Finance	Friday, 12 October
2	C6B Global Retirement Income Systems	Monday, 15 October
4	C10 Commercial Actuarial Practice	Tuesday, 16 October

3. Examination Papers

The Board of Examiners have agreed to release this semesters examinations questions only for subjects where the marking guides will not be used as learning resources in Semester 2 2018.

James Pettifer
Chair of the BOE 5/7/2018

EXAMINERS REPORTS SEMESTER 2 2018

COURSE 2A LIFE INSURANCE

1. Summary

1.1. Course Overview

The aim of the 2A Life Insurance Course is to provide the market, legislative and product knowledge, along with the skills and judgment, necessary for an actuary to tackle a range of management related problems in life insurance relating to underwriting and risk management, experience analysis, assumption setting and pricing.

1.2. Assessment

The assessment model is broken down into two parts:

Forum Participation	10%
Long Answer Question Exam	90%

1.3. Pass Rates

80 candidates enrolled this semester. Of these, 1 withdrew and 1 did not present, leaving 78 sitting the exam.

It is proposed that 22 candidates be awarded a pass, which implies a pass rate of 27.8%. Table 1 shows the historical pass rates for this subject:

Table 1 – Course Experience

SEMESTER	SAT	PASSED	PASS RATE
Semester 1 2018	**78**	**22**	**28%**
Semester 2 2017	62	23	37%
Semester 1 2017	65	13	20%
Semester 2 2016	66	14	21%
Semester 1 2016	82	16	20%
Semester 2 2015	57	18	32%
Semester 1 2015	65	20	31%
Semester 2 2014	56	25	45%
Semester 1 2014	62	16	26%
Semester 2 2013	59	25	42%
Semester 1 2013	50	26	52%
Semester 2 2012	43	14	33%
Semester 1 2012	67	22	33%
Semester 2 2011	54	10	20%
Semester 1 2011	60	18	30%

The 28% pass rate for this exam is lower than the 37% pass rate for the previous exam (Semester 2 2017) and lower than the historical average. Candidates who performed well in one or two of the questions seemed to perform poorly in the remaining question. Whether this reflects insufficient breadth of understanding or candidates lack of exposure to certain aspects of the course is unclear as the areas of strength and weakness varied from candidate to candidate and displayed no identifiable trends or patterns.

2. Assessment

2.1. Overall Performance

In general, the examination team remain disappointed in the performance of candidates and the perpetuation of many of the common faults cited in past reports.

Candidates need to read the question asked and not leap to reproducing information they know that is not directly related to the question. This was most evident in the question asking about life insurance company's obligations with regards to the Appointed Actuary role, where most candidates just espoused (and sometimes incorrectly) what an Appointed Actuary's obligations are.

It was extremely disappointing that only one or two candidates were able to correctly develop the multiple decrement table required in Question 1 whilst most used an incorrect multiplicative model {lx+1 = lx x (1-qx) x (1-sx)} as opposed to the correct additive approach {lx+1 = lx - dx - kx}. Such knowledge should have been learnt and tested in Part 1 and appears to have either been forgotten or never correctly learnt in the first place.

The lack of understanding of the behaviour and pricing of rider benefits and the pros and cons of marginal pricing may indicate the need to improve the course material available in product development and pricing.

When evaluating a potential purchase, most candidates focused solely on the potential business as usual / ongoing risks associated with managing the business without giving any regard to the risks associated with making the purchase decision and thereby missed out on many available marks. One of the challenges in writing the paper was to try and present the issue without focusing on the transaction specifically to see whether candidates would consider this aspect and this will be discussed with candidates during the feedback session to ascertain why candidates ignored this aspect.

Despite the amount of media attention and significant focus on both the Life Insurance Framework and mental health related claims particularly with regards to claims experience for Disability Income Insurance few candidates demonstrated much knowledge or appreciation of the issues involved. At the time this report was written it is unknown whether either of these topics were identified by the course tutor as potential inclusions in the exam (despite being completely independent of the exam writing process they have a history of accurately predicting at least part of the exam) but if they did, this makes candidates performance even less satisfactory.

Further commentary on a question by question basis is included below.

2.2. Exam Question by Question Analysis

Question 1

This question starts with basic bookwork for candidates and then extends into the practice of marginal pricing. Part (a) asks candidates to describe the difference between "death only" and "death with rider" mortality experience and then (b) asks candidates to develop a simple projection model of a newly underwritten death with (acceleration) TPD rider with different death and TPD sums insured. Part (c) then asks candidates to outline what assumptions they would need to make with the introduction of a double TPD option and finally part (d) asks candidates to explain marginal pricing with regards to the Double TPD option.

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**			
Strong Pass	40.0	66.7%	4	5.1%
Pass	31.0	51.7%	21	26.6%
Slightly Below Standard	27.9	46.5%	19	24.1%
Below Standard	21.0	35.0%	28	35.4%
Weak	13.0	21.7%	5	6.3%
Showed Little Knowledge	1.0	1.7%	1	1.3%
Did Not Attempt	0.0	0.0%	1	1.3%

Maximum Mark	43.5
Average Mark	28.2
Standard Deviation	6.7
Co-efficient of Variation	0.24

Overall, we were disappointed with the general standard of responses to this question. Despite this question being straightforward with a generous marking guide giving many opportunities to score marks, most candidates did not generate enough marks in the calculation part of this question which was worth 17 out of the 30 marks. Resulting in a pass rate of only 32%.

Part (a):
Despite being very straightforward, the average mark was only 1.7 out of 3. Candidates generally observed that death with rider rates were lower than death only, and some provided a reasonable explanation as to why this was the case. Few candidates showed evidence of a graph, or only looked at absolute differences rather than percentages and therefore only commented on older ages where there was an obvious gap.

Part (b):
Overall the responses were quite poor. Only a handful of candidates were able to correctly identify that there are two components of the calculation: splitting the Sum Insured into Death only and Death and TPD components and applying the rates accordingly. The majority of candidates used only one set of rates for the death component. A surprising number of candidates showed a lack of understanding of the selection effect, assuming that these factors were somehow already accounted for within the rate tables. Marks were also deducted for fundamental errors such as wrong decrements table, not applying correct lx and dx to derive expected claims cost or using different assumptions other than those specified in question. We encourage candidates to tech review their own work to avoid careless formulae errors, and to check for the reasonableness of their answer (e.g. an expected claim value in the millions is clearly incorrect for an SI of up to $1m).

Part (c):
Answers ranged from very poor to excellent. The better responses covered a broad range of assumptions, including take up, mortality, lapse, premium waiver and expense unit cost assumptions, and also specified how exactly they would apply in the specific scenario of the double TPD rider product. Marks were also awarded for commenting on reinsurance considerations. The poorer responses only identified one or two assumptions or were discussed too generally, with the answer showing a lack of understanding of the double TPD rider.

Part (d):
Most candidates had discussions that were again too general and lacked clear explanation of how marginal pricing specifically applied to double TPD rider. We saw

generic answers on the definition of marginal pricing which appeared to be a 'copy and paste' from the textbook rather than any attempt to explain the concept in their own words. Some candidates also did not write enough to generate sufficient points given the marks available for the question. Overall there was poor discussion on the implications of adopting a marginal pricing approach.

Question 2

This question tested candidates understanding of factors driving and risks associated with the purchasing of an Australian life insurance business as well as a life insures obligations with regards to the Appointed Actuary role by asking candidates to (a) discuss factors that may have influenced merger and acquisition activity, (b) list four requirements a registered life insurer must satisfy in respect of the Appointed Actuary role. Part (c) then presents candidates with a potential purchase of an Australian direct insurance business by an Asian domiciled life insurer with no experience in direct insurance and asks candidates to discuss various risks and why best estimate assumptions for the direct insurance business may differ between the two entities.

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**			
Strong Pass	47.0	78.3%	8	10.1%
Pass	39.0	65.0%	21	26.6%
Slightly Below Standard	35.1	58.5%	11	13.9%
Below Standard	31.0	51.7%	21	26.6%
Weak	27.0	45.0%	12	15.2%
Showed Little Knowledge	1.0	1.7%	5	6.3%
Did Not Attempt	0.0	0.0%	1	1.3%
Maximum Mark	54.0			
Average Mark	35.6			
Standard Deviation	7.9			
Co-efficient of Variation	0.22			

The question was fairly straight forward but required some ability to envisage and deduce factors that would be important in the scenario under consideration. The marking schedule was generous, with 78 points available overall to achieve the 30 marks. The pass mark was recommended as 65% (19.5/30) but it was noted by the markers that this represents only 25% of the 76 marks available so a realistic pass mark could actually be even higher.

Candidates frequently put down only as many points as there were marks, assuming that every point they put down was correct, and not a sub-part of another point already made. A better approach would be to put down extra points, if time permits.

In general, parts (a), (b), and (c)(i) and (c)(ii) were answered reasonably well (average marks = 67%), with many candidates failing on (c)(iii) (average marks = 45%). In particular:

Part (a):
Role of Appointed Actuary – Only about a quarter of candidates stated that a life insurance company had to have an Appointed Actuary. Also, most just listed the responsibilities of the AA, without noticing that the question was stated from the point of view of the company / Board of Directors. Better candidates were able to quote relevant sections from the Life Insurance Act and prudential standards. 12 points were available for a total of 4 marks (high ratio 3:1); however, the total mark available was reduced to 3 if the

candidate did not mention that the company had to appoint an AA and is required to have one at all times. Average mark 2.7 out of 4 (66%). About 60% of candidates achieved a 3 or 4 for this question.

Part (b):
Most candidates stated the key factors of reduced profitability / return on capital, increased capital requirements when capital could be better deployed elsewhere, reputation issues and foreign demand. Very few mentioned examples of actual sales in recent times. Overall a question that could be answered by reading widely in the financial press and applying general knowledge and logic. Candidates had to cover points from several areas to obtain high marks (e.g. strategy, capital and profitability, regulation and reputation, competition). 22 points were available for a total of 7 marks (high ratio 3.1:1); however, the average mark was only 4.6 out of 7 (65%). About 45% of candidates scored a mark of 5 or higher.

Part (c):
Most candidates interpreted this question as the operational risk which could be encountered subsequent to New Life purchasing Direct Co whilst the model solution focusses a lot on the transaction risk; however very few candidates mentioned any points for this. In marking the question, the interpretation was also skewed towards the ongoing operational risks rather than the transactional risk. Many candidates mentioned the key points of key personnel leaving, systems compatibility, and unfamiliarity with the Australian market, products and legal/regulatory system. 16 points available for a total of 6 marks (7 of the 16 points related to transaction risk). Average mark 4.0 out of 6 (67%). About 65% of candidates scored a mark of 4 or higher.

Lapse risks and mitigations – This was generally well answered, with many candidates picking up the key points of uncertainty about the new owner, and direct business generally having a higher lapse risk than traditional adviser business (that New Life would be familiar with). Some also mentioned the issue of potential selective lapsation. 9 points available for a total of 4 marks. Average mark 2.6 out of 4 (67%).

Differences in assumptions between New Life and Direct Co – This was the weakest result, with less than a quarter of candidates getting a mark of 6 or more out of 9. A common misinterpretation was to contrast how New Life would value its own retail advised business, with how Direct Co would value its direct life business. The question was aimed at analysing how New Life would value Direct Co's direct life business differently from Direct Co's own valuation, based on how New Life understood that business and what extra value it could add. Many candidates gave a general statement on expenses, and new business growth, but few gave sufficiently thoughtful specifics and examples. 19 points available for 9 marks. Average mark 4.2 out of 9 (45%)

Question 3

This question looks at recent issues in the market, in particular; (a) the introduction of the Life Insurance Framework and its implications with regards to impact on Lapses, Claims, Pricing & Profitability, Adviser Remuneration and Operational and other factors and then (b) how a life insurer could address particularly adverse claims experience on retail income protection where this is driven by a high number of early duration mental illness claims.

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**			
Strong Pass	34.0	56.7%	4	5.1%
Pass	31.0	51.7%	9	11.4%
Slightly Below Standard	27.9	46.5%	6	7.6%
Below Standard	18.0	30.0%	51	64.6%
Weak	14.0	23.3%	7	8.9%
Showed Little Knowledge	1.0	1.7%	1	1.3%
Did Not Attempt	0.0	0.0%	1	1.3%
Maximum Mark	38.5			
Average Mark	23.8			
Standard Deviation	6.0			
Co-efficient of Variation	0.25			

Overall the question was not well answered, around 75% of responses were marked as below standard or worse and a further 8% only achieving a slightly below mark resulting in a pass mark of only 16%.

It was disappointing to see candidates missing out on marks because they:

- Did not consider or provide the obvious points – for example in part a) forgetting to consider the impact of higher renewal commission and focusing on initial commission only. Many candidates missed easy marks for not stating the obvious.

- Made a statement e.g. "Premiums are expected to reduce" without saying why or providing any justification.

- Answered too generally and not in the context of the question – this was particularly evident in part b regarding mental illness claims.

Part a):
Lapses: Overall candidates focused on the initial commission changes under LIF. Most missed the obvious points by not stating clearly enough the impact on 1st year, 2nd year and subsequent year lapse rates. Most did ok at getting some of the available marks here.

Claims: This wasn't well answered. Some candidates did discuss the impact of churning, most didn't think about the industry overall at all. Some weren't sure one way or another.

Pricing and Profitability: Not many candidates mentioned that NB strain was reduced due to the lower initial commission rates, and would lead to reduction in capital requirement, and hence improved profitability.

Adviser remuneration: Similar to lapse responses, candidates missed marks here for not considering the obvious impacts on the remuneration pattern and what the income flow would be like for the adviser, many didn't comment at all on renewal commission or the time it would take to build up income to similar levels.

Operational and any other considerations: Some candidates misunderstood the question and provided answers which related to operational risk.

Marks were also awarded for relevant discussion regarding:

Future lapse experience investigation in a post LIF world – i.e. splitting experience investigation into LIF and non-LIF business

Adviser engagement, training and education on LIF

Part(b):
Experience analysis: This part was not answered very well. Most candidates pointed out further analysis is required on the segmentation of the experience analysis. However, the answers were very general with regards to the process of experience analysis for income protection, rather than specific for the scenario provided in the question.

Few candidates separately called out doing analysis by waiting period and few called out analysis gross and net of reinsurance.

Most picked up at least part of a mark for discussion regarding whether the trend was an industry wide issue – several mentioned this in the 'Other considerations' section and were awarded marks there.

Marks were also awarded for discussion regarding looking at the termination experience of the mental health claims.

Underwriting: Again, the answers provided were general and not specific for the question. Rather than pointing out that the current underwriting processes and procedures may not be effective enough to identify pre-existing mental illness condition, a lot of candidates went on with discussion assuming that there was limited underwriting on income protection business, and therefore did not score very well on this part of the question.

Product design: Most candidates suggested changing the terms and conditions of the product but did not suggest features which could help claimants recover and reduce claims cost specific to mental health claims.

Claims management: Many responses were too general and not specific enough to mental illness.

Pricing: Many candidates discussed increasing premium rates but few discussed the implications e.g. on sales/competitiveness.

COURSE 2B LIFE INSURANCE

1. Summary

1.1. Course Overview

The aim of the 2B Life Insurance Course is to provide the knowledge, skills and judgment necessary for an actuary to tackle a range of management related problems in life insurance relating to valuation techniques, capital management, profit analysis, valuation of a company, reporting of results and professionalism.

1.2. Assessment

The assessment model is broken down into two parts:

Forum Participation	10%
Long Answer Question Exam	90%

1.3. Pass Rates

57 candidates enrolled this semester. All enrolled candidates sat the exam.

It is proposed that 19 candidates be awarded a pass, which results in a pass rate of 33%. Table 1 shows the historical pass rates for this subject:

Table 1 – Course Experience

SEMESTER	SAT	PASSED	PASS RATE
Semester 1 2018	**57**	**19**	**33%**
Semester 2 2017	49	15	31%
Semester 1 2017	52	18	35%
Semester 2 2016	46	15	33%
Semester 1 2016	50	11	22%
Semester 2 2015	50	17	34%
Semester 1 2015	53	21	40%
Semester 2 2014	51	20	39%
Semester 1 2014	60	22	37%
Semester 2 2013	44	17	39%
Semester 1 2013	43	11	26%
Semester 2 2012	43	17	40%
Semester 1 2012	52	13	25%
Semester 2 2011	41	6	15%
Semester 1 2011	41	16	39%

The 33% pass rate for this exam is slightly higher than the 31% pass rate for the previous exam (Semester 1 2017) and in line with the historical average of 33%.

2. Assessment

2.1. Overall Performance

The quality of the submissions to the Forum continues to be very high. It is however surprising to continue to see a handful of candidates not attempting to meet the minimum requirements.

The performance in the Long Answer Questions was broadly consistent with the previous semester overall and continues to be variable. As with past semesters, this component covered a range of topics and contained a mix of:

- Spreadsheet work and written responses.
- Sections requiring simple and complex judgment.
- Components that were prescriptive and others that were open (inviting candidates to raise and discuss points in relation to the topic at hand).

This made the questions good discriminators, in particular, when assessing borderline candidates.

Consistent with previous semesters, some candidates performed very well on one or two of the Long Answer Questions but performed poorly (in some cases very poorly) on the other(s). Only a handful of candidates appeared strong across all areas of assessment.

Most candidates appeared to complete the exam. However, some candidates were let down by:

- Devoting too much time to certain parts of the exam, leaving them little ability to demonstrate the required knowledge, understanding and judgment in other parts.
- Not reading and/or answering the question correctly – for example not allowing for tax in the calculation of asset stresses in part a) of question 1, when it was specifically highlighted in the question instructions.
- Not addressing the circumstances described in the question, and instead giving a generic textbook answer (which may not have relevance).
- Not assessing the reasonableness of the numbers coming out of their calculations – for example in the calculation of asset stresses in part a) of question 1.

Many candidates failed to demonstrate an understanding of:

- Reasons and drivers of changes in Surplus Assets for a statutory fund.
- Impacts of model changes on policy liabilities and profit, where there are sufficient profit margins to absorb the impact.
- Total profit over the lifetime of a policy, which would be the same under any valuation methodology.

The presentation of reasonable arguments to back up conclusions and apply complex judgment was missing in many cases, with the quality of explanations often weak for such candidates.

2.2. Exam Question by Question Analysis

Question 1

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**	**60.0**			
Strong Pass	48.0	48.0	80.0%	5	9%
Pass	42.5	42.5	70.8%	14	25%
Slightly Below Standard	38.3	38.3	63.8%	15	26%
Below Standard	33.5	33.5	55.8%	11	19%
Weak	27.5	27.5	45.8%	8	14%
Showed Little Knowledge	1.0	1.0	1.7%	4	7%
Did Not Attempt	0.0	0.0	0.0%	0	0%
Maximum Mark	53.5	53.5			
Average Mark	38.2	38.2			
Standard Deviation	8.4	8.4			
Co-efficient of Variation	0.22	0.22			

Question 1 focused on a small life company writing a growing portfolio of level premium funeral business along with a closed book of group insurance. The underlying focus on the question related to capital.

Candidates were initially asked to determine the various components of the Asset Risk Charge (ARC) using the spreadsheet provided. The remainder of the question required candidates to demonstrate an ability to assess and provide advice on the implications of:

- The current business strategy on the level of surplus assets.
- A revised investment strategy on the level of capital and profit over the next year.

This question was generally answered reasonably well, with a pass rate of 33%. Most candidates did well with calculating the ARC, with better candidates answering the remainder of the question with core points directly relevant to the situation in the question (and articulating these points clearly).

The majority of candidates attempted all components of part a) (calculating the ARC), which was reasonably well done. Most candidates made several errors, with better candidates only making one or two. The most common errors were:

Across parts a)i) to a)iv): not determining each component of the ARC net of tax, as instructed.

For parts a)ii) and a)iii) (real interest rate and expected inflation stress components):

Using a 'zero coupon term to maturity' approach, rather than a duration-based approach to determine the impact of the stress.

Stressing either only the assets or only the liabilities (rather than both).

For part a)iv) (default stress component):

Stressing either the reinsurance asset or the outstanding premium (rather than both).

Applying an incorrect default stress percentage to the respective item.

For part a)v) (aggregation of stresses):

- Not applying the signs of the stresses correctly.
- Using an incorrect formula to aggregate.
- Assuming the default stress was the credit spread stress, and so including it in the aggregation (using the correlations) rather than adding it after this aggregation.

Part b) was reasonably well done. Better candidates were able to clearly articulate relevant factors and link these to the strategy of ABC Life (in relation to exiting the Group market and growing the Direct level premium business), as well as to the subsequent change in surplus assets (including directional impact). Weaker candidates raised generic points which weren't directly relevant to the situation, or only focused on asset risks (despite the question not requiring a link to part a)).

Part c)i) had mixed responses. While most candidates correctly identified that the Prescribed Capital Amount in aggregate would reduce and one factor would be a reduction in the equity stress, only the better candidates were able to link this to the offset by a reduction in the aggregation benefit. Only around half the candidates identified the linkage to asset and liability duration match (or that assets and liabilities would move in a consistent direction).

Part c)ii) was very well done, with most candidates scoring full marks by correctly identifying that a shift from equities to fixed interest assets which are duration matched to the liability would reduce both the amount and volatility of profit expected. Weaker candidates didn't articulate why this would be the case.

In part c)iii), while several candidates raised the need for rebalancing to ensure the assets and liabilities remain duration matched as a strategy, very few linked this to the strategy of ABC Life (for example by noting that in the short term the liability duration would be expected reduce as a result of exiting the Group market).

Question 2

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**	**60.0**			
Strong Pass	44.0	44.0	73.3%	8	14%
Pass	37.0	37.0	61.7%	11	19%
Slightly Below Standard	33.3	33.3	55.5%	7	12%
Below Standard	26.0	26.0	43.3%	11	19%
Weak	19.0	19.0	31.7%	12	21%
Showed Little Knowledge	1.0	1.0	1.7%	8	14%
Did Not Attempt	0.0	0.0	0.0%	0	0%
Maximum Mark	53.0	53.0			
Average Mark	31.2	31.2			
Standard Deviation	10.5	10.5			
Co-efficient of Variation	0.34	0.34			

Question 2 focused on a medium sized life company writing only retail yearly renewable term business covering death and disability income. The company operated in a fictitious country which had adopted identical standards as those applying in Australia for determining policy

liabilities and capital. Candidates were presented with 3 proposed changes for determining policy liabilities.

Based on a simple table of provided information, candidates were initially requested to determine the policy liability under existing regulations. The remainder of the question then focused on each of the proposed changes. For each of the changes candidates were required to assess how the change would impact the pattern of profit release, which included the requirement to perform some simple calculations.

More complex analytical and communication skills were then tested by requiring candidates to draft a written response to the CFO addressing specific business concerns related to each of the proposed changes.

This question was generally answered reasonably well, with a pass rate of 33%, though the quality of the answers was variable – indicating that this question was a good discriminator. The calculation components of the question were done reasonably well by most candidates, with better candidates able to demonstrate complex judgment in part b)ii) (Embedded Value (EV) impact) and part d)iii) (advantages/disadvantage of capitalising acquisition expenses).

Almost all candidates correctly calculated the policy liability in part a). A handful of candidates made an arithmetic error.

Part b)i) was answered reasonably well. Many candidates identified that the change in profit carrier would lead to faster profit emergence, with stronger candidates including appropriate discussion on why claims are likely to be higher in the later years of a policy and comparing this to why policy count would decrease over time. Some candidates thought profit emergence would be slower, indicating they didn't understand the mechanics of the profit carriers described.

Part b)ii) was answered very poorly. Many candidates confused reported (accounting) profit and distributable profit, believing that earlier accounting profit emergence leads to higher EV. Some candidates indicated there would be no change in distributable profit, but better candidates identified that distributable profits are net of tax and tax would change as a result of the different accounting profit emergence.

Part c)i) was well done, with many candidates correctly completing the calculation. Common errors include:

- Getting the sign of premiums and/or claims/expenses incorrect.
- Setting the policy liability to be 0 (instead of re-equating to the policy liability at 31 December 2017).

Candidates who determined a "Present Value of Future Conservative Shareholder Profits" that was higher than under the LPS340 approach were clearly not sense checking their results. Also, some candidates did not set out their approach clearly.

Part c)ii) had mixed responses. Most candidates realised that planned profit margins would reduce under the "Conservatively Estimated Liability" (CEL), but did not clearly identify that experience profit will emerge. Better candidates mentioned there would be higher future experience profits emerging (as a result of releasing the prudence in the liability). Better candidates also communicated in a language appropriate for a Chief Financial Officer and directly addressed his concerns.

Part di) had mixed responses. Weaker candidates didn't perform the calculation after the acquisition costs had been incurred (as instructed).

Part d)ii) was generally well done. Better candidates identified that there would be a significant loss reported in the first year, with higher profits emerging thereafter. Weaker candidate made generic statements such as profit emerging slower.

Part d)iii) was poorly done. While many candidates recognised that profit over the life of a policy remains unchanged, better candidates were able to clearly articulate an advantage and two disadvantages. Weaker candidates referenced sensitivity to lapse rates and/or high capital strain, despite there being no change to the new business strain from a capital point of view under the proposal (under current standards deferred acquisition costs are inadmissible for capital purposes). Better candidates also used language appropriate for a submission to an industry body.

Question 3

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**	**60.0**			
Strong Pass	40.0	40.0	66.7%	8	14%
Pass	36.0	36.0	60.0%	13	23%
Slightly Below Standard	32.4	32.4	54.0%	5	9%
Below Standard	29.0	29.0	48.3%	12	21%
Weak	21.0	21.0	35.0%	12	21%
Showed Little Knowledge	1.0	1.0	1.7%	6	11%
Did Not Attempt	0.0	0.0	0.0%	1	2%
Maximum Mark	48.0	48.0			
Average Mark	30.7	30.7			
Standard Deviation	9.3	9.3			
Co-efficient of Variation	0.30	0.30			

Question 3 focused on a small Australian life insurer, the smallest entity of a financial services company listed on the Australian Securities Exchange. Whilst the company has closed both its conventional participating and yearly renewable term retail products (lump sum and disability income) to new business, it has a growing book of direct yearly renewable term business covering lump sum benefits.

The company is currently preparing its end of year financial statements with initial results prepared but under internal review. Candidates were supplied an excerpt of the current financial results, covering a balance sheet, profit and loss statement, policy liabilities and an analysis of profit.

Candidates were asked to prepare responses to a number of questions relating to the results raised by the Actuarial Manager and Head of Investor Relations. In the final part of the question, the auditors had identified a significant error in changes made to the lump sum model during the past year, with candidates asked to assess the impact on the liabilities, profit and embedded value.

This question was answered fairly well overall, with a pass rate of 37%, though the quality of the answers was variable – indicating that this question was a good discriminator. While many candidates did well in part c), they often struggled with parts a) and b). Better candidates were able to apply the principles to the situation presented in the question, rather than raising generic points.

Part a)i) was fairly well answered. Most candidates mentioned bonuses and profit for the year, however better candidates linked the following to the growth in the Policy Owners Retained Profits (PRP):

- No bonuses had been paid in the last year.

- 80% of profits (which were provided in the Appendix) must be allocated to the PRP.

Weaker candidates failed to give descriptions of the profit performance for the period without linking it back to the magnitude of the growth in PRP, or mentioned bonuses briefly without linking it to the specific information given in the question.

Part a)ii) was poorly done. Better candidates correctly identified capital injections as the primary reason net assets would have grown more than profit, and linked this to the capital required to fund the growth of the Direct business. A common error was trying to find reasons that experience items may have occurred but would not have contributed to profit, e.g. unrealised gains.

Part b)i) was generally answered well. Most candidates either talked about the release of positive reserves or that future outflows were more than future inflows. Better candidates mentioned both of these. Weaker candidates were very brief and did not describe a 'dynamic' as stated in the question.

Part b)ii) was answered very poorly. Many candidates failed to show any understanding of the purpose of an Analysis of Profit (AoP). Better candidates did talk about the AoP being an actual versus expected, and realised that there was no error in the results. The strongest answers recognised that expected investment returns were already allowed for in planned profits. Common errors include hypothesising what the error may have been, and discussing potential items which may have been included in the AoP but not profit, or vice versa.

For part b)iii), many candidates got the two basic issues right in this part, but didn't raise enough relevant points. Better candidates not only identified the economic profit and that matching of assets and liabilities was a strategy, but also stated that the assets and liabilities were mismatched when talking about the loss during the period. Weaker candidates didn't provide enough explanation and/or provided less relevant strategies (such as claims management or reinsurance).

Each component of part c) was generally quite well done.

- For Part c)i), most candidates identified that the policy liability would not change and there would be no profit. Better candidates were able to describe why this would happen under Margin on Services. Weaker candidates complicated the situation with tax, franking credits or other issues.
- For part c)ii), better candidates were able to link the reduction in the present value of future profit margins from part c)i) directly to a reduction in the Value of inforce business component of EV, as well as identifying that the discount rate would be different. Weaker candidates raised the discount rate difference, but incorrectly concluded the impact on EV was larger. Also, some candidates got side tracked by issues to do with franking credits and tax rather than the main issue of valuing discounted future profits.
- For part c)ii),most candidates realised that because of loss recognition a loss would need to be recognized in the current period as a result of the correction. Better candidates explained this clearly and included all the relevant details. Weaker candidates raised the 'impact' on the BEL, but did not actually state that it would increase. Some candidates also got confused by the policy liability being negative, and so confused the direction of the change.

COURSE 3A GENERAL INSURANCE

1. Summary

1.1. Course Overview

The aim of the 3A General Insurance Course is to provide the knowledge, skills and judgment necessary for an actuary to tackle a range of problems in general insurance relating to products, accident compensation schemes, valuation techniques, accounting and management information.

1.2. Assessment

The assessment model is broken down into two parts:

Forum Participation	10%
Long Answer Question Exam	90%

1.3. Pass Rates

110 candidates enrolled this semester. Of these, 1 withdrew and 1 did not present, leaving 108 sitting the exam.

It is proposed that 17 candidates be awarded a pass, which implies a pass rate of 16%. Table 1 shows the historical pass rates for this subject:

Table 1 – Course Experience

SEMESTER	SAT	PASSED	PASS RATE
Semester 1 2018	**108**	**17**	**16%**
Semester 2 2017	91	24	26%
Semester 1 2017	92	23	25%
Semester 2 2016	91	21	23%
Semester 1 2016	106	35	33%
Semester 2 2015	82	23	28%
Semester 1 2015	90	28	31%
Semester 2 2014	76	15	20%
Semester 1 2014	66	17	26%
Semester 2 2013	76	14	18%
Semester 1 2013	96	31	32%
Semester 2 2012	96	29	30%
Semester 1 2012	103	29	28%

The pass rate of 16% for this semester is the lowest pass rate in many years and well below the historical average of 27%. While the pass rate is low the number of candidates passing the course is not dissimilar to the level in 2013 and 2014. Passing candidates seemed to have good course knowledge and the ability to use that knowledge in a way that is relevant to the questions.

2. Assessment

2.1. Overall Performance

The quality of the submissions to the Forum continues to be very high. It is, however, surprising to continue to see a handful of candidates not attempting to meet the minimum requirements. In some cases, these marks can mean the difference between passing and failing.

Consistent with previous semesters, some candidates performed very well on one or two of the Long Answer Questions but performed poorly (in some cases very poorly) on the others – poor exam technique appears to be the main reason for this. Only a handful of candidates appeared strong across all areas of assessment.

Like other exams in recent semesters this exam was not considered to be a lengthy exam. Time management continues to be an issue for students taking this subject with many not allocating their time appropriately between each of the questions. Often, candidates devote too much time to certain parts of the exam, leaving them little ability to demonstrate the required knowledge and understanding of a passing candidate in other parts. A good example of this was in Question 3a) where many candidates spent too much time conducting unnecessary analysis rather than focussing on what was required in the question. Candidates should consider using the allocated marks as an indication of how much time should be spent on each part.

Question 3 proved to be one of the more challenging and time-consuming questions that resulted in being a good discriminator when assessing borderline candidates. Many candidates did not perform well in this question for either lack of attempt, not conducting all the necessary components, or not conducting sense-checks on their results before making a recommendation. To provide examples, some candidates: -

- had valuation models that were giving widely different results which should have signalled an obvious error in one or more of the methods;
- recommended a gross central estimate that was significantly lower than the results from any of the valuation models;
- recommended net provisions that were based on the distribution statistics provided rather than on their analysis from part a).

It is apparent that candidates attempting this course generally do not have strong critical thinking and practical skills to get through the course.

2.2. Exam Question by Question Analysis

Question 1

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**	**60.0**			
Strong Pass	37.0	37.0	61.7%	4	4%
Pass	28.5	28.5	47.5%	15	14%
Slightly Below Standard	25.7	25.7	42.8%	13	12%
Below Standard	19.0	19.0	31.7%	35	32%
Weak	14.0	14.0	23.3%	20	18%
Showed Little Knowledge	1.0	1.0	1.7%	21	19%
Did Not Attempt	0.0	0.0	0.0%	1	1%
Maximum Mark	40.0	40.0			
Average Mark	21.1	21.1			
Standard Deviation	8.1	8.1			
Co-efficient of Variation	0.39	0.39			

Question 1 examined the technical and practical elements of workers compensation outstanding claims valuations for a self-insured organisation. The question comprised of four parts. Part a) examined whether candidates understood the interaction between case estimates and provisions and the impact of changes in the underlying components while part b) considered the technical aspects and merits of different model approaches for large claims. Part c) considered the drivers of movements in the claims provision over time and part d) examined the candidates' understanding of the role of risk margins for a self-insurer.

Part a)

Part ai) was well attempted but few candidates were successful in understanding the drivers of the provision/case estimate ratio in the early years of self-insurance with most only focussing on IBNR and IBNER. In aii), most candidates were only able to identify two or three drivers for changes in the provision/case estimates ratio, with several responses not having an impact on the ratio. The quality of responses in part aiii) was poor with most candidates failing to property explain why the ratio would change following the closure of several larger claims.

The average mark for this part was 2.2/6.

Part b)

Part bi) was reasonably answered with most candidates focussing on small/new portfolios with limited data. Part bii) and biii) were both well answered with the better candidates able to provide stronger explanations. Part biv) was poorly answered with nearly half of candidates scoring no marks. Few candidates were able to identify the challenges for each approach, demonstrating a general poor understanding of the technical challenges of modelling large claims.

The average mark for this part was 3.7/12.

Part c)

Part ci) required candidates to provide a justification and a view on whether the provisions were too conservative. Most candidates provided limited justification, noting the inclusion of IBNR and IBNER, but not other possible reasons for the difference between the provision and case estimates. Many candidates did not go on to provide a firm view on whether there was conservatism, one of the main concerns of the stakeholder and missing that an actuarial review had already been performed, with no issued identified. Part cii) was reasonably answered with candidates generally identifying the issue of increasing exposure, however; the quality of explanation for the rate of increase slowing could be clearer in many cases.

Part ciii) was poorly answered. Many candidates suggested that the provision should decrease. For candidates who identified an increase, the reasoning behind the increase was not always sound. In general, candidates had difficulty understanding the movement of the provision on transition into a mature/steady state. As per ai), this part highlighted that candidates needed a deeper understanding of the first principles behind outstanding claims valuations. It was surprising to note that no candidates mentioned that future provisions should increase due to provisions being discounted by one year less each time.

The average mark for this part was 2.9/9.

Part d)

This part was generally well answered with most candidates able to properly describe the purpose of risk margins and their impact on profit recognition. Unfortunately, there are many candidates that do not appreciate that self-insurers are not APRA-regulated entities, making irrelevant references to incorrect regulatory standards and, in some cases, incorrect accounting standards.

The average mark for this part was 1.7/3.

Question 2

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**	**60.0**			
Strong Pass	37.5	37.5	62.5%	9	8%
Pass	30.0	30.0	50.0%	23	21%
Slightly Below Standard	27.0	27.0	45.0%	12	11%
Below Standard	22.0	22.0	36.7%	22	20%
Weak	18.0	18.0	30.0%	18	17%
Showed Little Knowledge	1.0	1.0	1.7%	24	22%
Did Not Attempt	0.0	0.0	0.0%	1	1%
Maximum Mark	42.5	42.5			
Average Mark	24.4	24.4			
Standard Deviation	8.9	8.9			
Co-efficient of Variation	0.36	0.36			

Question 2 examined the issues around a new personal injury scheme in the fictitious country of Chindia. The question looked at the holistic issues involved, including identifying what heads of damage would be prevalent in the scheme, and addressed the appropriateness of valuation methodologies. Candidates were also asked to perform a valuation with high level initial data, provide advice to the Governmental about key challenges, and comment on the

appropriateness of managing uncertainty for a very long tailed portfolio.

Overall, the question seemed to have a good mix of bookwork and judgement, however many candidates did not perform particularly well in sections that required going beyond the standard bookwork response. Exam technique seems to be a key challenge for many candidates with many answers being too high level, or not answering the question.

Part a)

In ai), while most candidates were able to identify some heads of damage, many candidates performed poorly because they did not answer the question. Instead, many categorised all possible heads of damage as either Short Tail or Long Tail, without commenting on which would be more prevalent.

Part aii) was well attempted with many candidates able to explain why the government may have opted for a no-fault scheme; however, many candidates were too vague in their responses to achieve full marks.

In aiii) candidates were asked to recommend a long term valuation approach for the scheme. There was a strong correlation between candidates that understood the prevalent heads of damage in the long term from ai) and those that proposed the right approaches. Again, many candidates provided insufficient justification for their recommend approach.

Part aiv) was well answered with the majority of candidates identifying the lack of data and uncertainty as the main challenges for valuing the scheme's liabilities in the short term. However, few candidates went beyond this to comment on the longevity of the liabilities and the issues around mortality and economic assumptions.

The average mark for this question was 4.1/11.

Part b)

This part required candidates to perform an initial valuation of the total cost of benefits for the scheme. This section was answered relatively well with most candidates able to calculate the split of low and high severity participants, and to correctly allow for the expected number of participants. Many candidates struggled to apply the life tables correctly with many forgetting to allow for the probability of surviving to age 12 or for allowing for life expectancy.

The average mark for this question was 3.3/6.

Part c)

This part asked candidates why the government may have opted to fund this scheme on a PAYG basis. It was easy for candidates to start listing textbook answers; however, many did not apply them to the context of this question and so were not awarded full marks. Although many candidates were able to articulate the benefits of a PAYG scheme, few candidates went beyond this to discuss the uncertainty in the total cost of the scheme and hence the challenge of it being fully funded upfront.

The average mark for this question was 1.4/4.

Part d)

Part di) required candidates to consider key challenges that the scheme will face. Candidates generally felt comfortable to discuss political risks and the ongoing funding status, however it was clear that some candidates didn't read the question properly as they discussed the funding method or uncertainties around the valuation of scheme liabilities which was explicitly excluded from the question.

Part dii) considered possible risk mitigation techniques for the scheme. Many candidates recommended APRA's requirements for discounting without realising that schemes are not regulated in the same manner and were unable to explain the fundamental reason for APRA's requirement, or did not discuss any challenges in using this rate for discounting.

Part diii) considered reinsurance and the use of risk margins as additional risk mitigation techniques for the scheme. Many candidates provided bookwork answers without referring back to the scheme and the issues it would pose for funding.

The average mark for this question was 3.3/9.

Question 3

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**	**60.0**			
Strong Pass	36.0	36.0	60.0%	1	1%
Pass	27.0	27.0	45.0%	15	14%
Slightly Below Standard	24.3	24.3	40.5%	8	7%
Below Standard	16.0	16.0	26.7%	38	35%
Weak	10.5	10.5	17.5%	29	27%
Showed Little Knowledge	1.0	1.0	1.7%	16	15%
Did Not Attempt	0.0	0.0	0.0%	2	2%
Maximum Mark	38.5	38.5			
Average Mark	17.9	17.9			
Standard Deviation	7.9	7.9			
Co-efficient of Variation	0.44	0.44			

Question 3 was a technical question that required candidates to recommend an outstanding claims provision for Splendid Insurance. The question provided candidates with data and valuation models already populated with pre-selected factors that candidates were required to review before making their recommendation.

This question was answered poorly overall. Candidates appear to apply poor exam technique with many spending too much time in part a) and often wasting too much time on unnecessary analysis rather than focussing on what was required in the question.

Part a)

Part ai) required candidates to calculate the outstanding claims liability using four standard reserving models set up by the analyst – PLD, ICD, PPCI and PPCF. Candidates were asked to examine the data and review the analyst's adopted factors. Many candidates did not identify the typo in the selected factors for the claim numbers model, and most did not adjust for the large claim in development period 5, with almost no candidates allowing for tail development beyond period 9 in the PLD model. Many candidates incorrectly deducted actual payments from the current values incurred cost (rather than the payments to date in current values) to derive the outstanding claims liability (in current values) and several candidates linked the outstanding claims liability to the incurred cost from the valuation models.

Part aii) required candidates to select the models appropriate for the portfolio and to recommend a gross outstanding claims liability including claims handling expenses. There was a wide range of model selections with common mistakes being reliance on models that were not appropriate given the circumstances of the portfolio. Many candidates attempted to calculate an inflated/discounted outstanding claims liability without projecting out future payments from the valuation models.

Part aiii) required candidates to explain their model selection from part aii). Many candidates were awarded some marks for identifying the pros and cons of the various models but only a few candidates justified their model selections within the context of the question – e.g. PLD is generally not appropriate as PI/PL claim payments are lumpy and it

overstates the liability for accident year 2014 due to the large claim.

The average mark for this question was 6.5/18.

Part b)

This question required candidates to calculate the net provision using the data provided. The question was answered poorly. A comparison of gross to net payments, case estimates or incurred cost was all that was needed to identify that a proportional treaty was in place and that there was a claim that breached the retention in the 2014 accident year. Only a handful of candidates identified and applied the correct proportional reinsurance percentages with fewer commenting on the large claims from the 2014 accident year.

The average mark for this question was 0.5/3.

Part c)

This question required candidates to calculate a risk margin for the public liability portfolio using the distribution statistics provided. This question was answered poorly with only a few candidates interpreting the output correctly. Fewer than ten candidates calculated and applied the half standard deviation rule and, disappointingly, there were many candidates which based their recommended provision on the distribution statistics provided rather than on their analysis from part a).

The average mark for this question was 0.7/4.

Part d)

This question required candidates to comment on the impact of a loss of a quarter of the claims team on the outstanding claims provision. The question was answered poorly. Most candidates identified that this would lead to delays in claim payments and finalisations, but only a few explained the impacts on other aspects of the valuation such as claims handling expenses, the risk margin and selected factors. Disappointingly, there were a high number of candidates that suggested that the claim triangles would change and hence the resulting factors, despite the change not occurring until after the valuation date.

The average mark for this question was 1.3/5.

COURSE 3B GENERAL INSURANCE

1. Summary

1.1. Course Overview

The aim of the 3B General Insurance Course is to provide the knowledge, skills and judgment necessary for an actuary to tackle a range of management related problems in general insurance relating to the pricing of all general insurance products, as well as capital management and financial condition reporting.

1.2. Assessment

The assessment model is broken down into two parts:

Forum Participation	10%
Long Answer Question Exam	90%

1.3. Pass Rates

61 candidates enrolled this semester. Of these, 3 withdrew and 2 did not present, leaving 56 sitting the exam.

It is proposed that 17 candidates be awarded a pass, which implies a pass rate of 30%. Table 1 shows the historical pass rates for this subject:

Table 1 – Course Experience

SEMESTER	SAT	PASSED	PASS RATE
Semester 1 2018	**56**	**17**	**30%**
Semester 2 2017	53	21	40%
Semester 1 2017	73	33	45%
Semester 2 2016	75	27	36%
Semester 1 2016	55	17	31%
Semester 2 2015	54	20	37%
Semester 1 2015	54	20	37%
Semester 2 2014	63	23	37%
Semester 1 2014	61	16	26%
Semester 2 2013	64	17	27%
Semester 1 2013	62	22	35%
Semester 2 2012	69	26	38%
Semester 1 2012	71	27	38%

The 30% pass rate for this exam is lower than recent exams and the overall historical average. Candidates seemed to have good course knowledge but not the ability to use that knowledge in a way that was relevant to the question compared to recent exams. We did not feel that the paper on this occasion was materially more difficult than previous exams. The average mark achieved was also lower by candidates.

2. Assessment

2.1. Overall Performance

Candidates performed marginally below the standard of previous exams with well prepared candidates still able to address the exam effectively and be credited with a pass. Candidates

did not handle the judgment questions well particularly part 1e) and 3h) which were clearly showed the stronger candidates who could grasp the concepts and make sensible recommendations.

The standard of difficulty in each question appeared to be relatively consistent and there were particularly strong or weak areas across the overall exam.

2.2. Exam Question by Question Analysis

Question 1

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**	**55.7**			
Strong Pass	39.0	36.2	65.0%	5	9%
Pass	33.5	31.1	55.8%	14	24%
Slightly Below Standard	30.2	28.0	50.3%	10	17%
Below Standard	22.0	20.4	36.7%	19	33%
Weak	15.0	13.9	25.0%	7	12%
Showed Little Knowledge	1.0	0.9	1.7%	1	2%
Did Not Attempt	0.0	0.0	0.0%	2	3%
Maximum Mark	55.5	51.5			
Average Mark	28.7	26.7			
Standard Deviation	9.1	8.5			
Co-efficient of Variation	0.32	0.32			

The overall pass rate on this question of 33% was consistent with the overall exam

This question is a high-level contextual question focused on testing the candidates' knowledge of pricing. To perform well for this question, candidates have to demonstrate a true understanding of the underlying concepts of technical pricing and commercial complications in the market, and look beyond just the "list" type responses.

Comments on each section are as follows

a) The majority of candidates were able to define sound premium and be able to list the components that make up the sound premium (i.e. claims costs, expenses, profit margin)

   Describing the technical rating process was what distinguished good answers. Good candidates answered the question asked and described the rating process (i.e. collecting data, modelling fitting, testing, monitoring), but majority of candidates have just relisted the components of the sounds premium. Candidates should re-familiarise with the sound rating process as this part of the question was generally answered poorly.

b) The majority of candidates were able to identify main reasons: regulation, cross subsidisation, price elasticity, competitive pressures. Good answers also considered fairness and advantages/disadvantages of each reason. This question was generally well answered.

c) Candidates could generally describe the key reasons why an insurer would need to monitor competitor pricing. Candidates who have scored higher in this question have

also described how competitor pricing can be used in the pricing process e.g. relative competitiveness measure in elasticity modelling, refine and compare product features/coverage.

d) Most candidates were able to identify the main restrictions such as regulations, capping/cupping, competition, legal/moral restrictions. Good answers also gave examples rather than simply listing the restrictions. Some candidates got confused with part b) and listed the same reasons.

e)

i. Most candidates can correctly define the Gini coefficient and be able to explain that it is a non-parametric mode evaluation test.
ii. Most candidates got the GINI calculations wrong, but comments based on the wrong calculations would still earn 1 mark. Most candidates did not comment on results at all and missed out on easy marks. A lot candidate did the calculation for the "complement" fraction. Gini should be the ratio of the area for current model to gain to perfect model, divided by area under perfect model. a lot did area under current model as the numerator which generated the answer for the "complement" fraction
iii. Most candidates can describe the graphs
iv. Most candidates can identify that more profit comes from higher quality rating business
v. The better candidates were more concise to point out that insurance is all about pooling of both good and bad risks, and what is presented in the table is just an outcome of actual claims eventuating. Some further elaborated how the metric can be improved by looking at "risk exposure" as opposed to just claims outcome. They have also identified that claims experience can be volatile and 5 years of claims history may not be appropriate for some lines of business. Most can identify cross subsidisation and suggest reasons for why this may exist.

Question 2

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**	**55.7**			
Strong Pass	44.0	40.8	73.3%	3	5%
Pass	38.0	35.3	63.3%	16	28%
Slightly Below Standard	34.2	31.7	57.0%	13	22%
Below Standard	28.0	26.0	46.7%	18	31%
Weak	22.0	20.4	36.7%	5	9%
Showed Little Knowledge	1.0	0.9	1.7%	1	2%
Did Not Attempt	0.0	0.0	0.0%	2	3%
Maximum Mark	45.0	41.8			
Average Mark	33.6	31.2			
Standard Deviation	9.0	8.4			
Co-efficient of Variation	0.27	0.27			

The overall pass rate on this question of 33% was consistent with the overall exam

This question tested the candidate's knowledge of the possible impact of climate change in all aspects of a genera insurer's operations. This question specifically was not overly technical but aimed to test the breadth of knowledge a candidate would have to be a effective consultant to an insurance management team on topical and relevant issues.

Going through the question the candidate was guided to identify the stakeholders that would be interested in actions that the insurer was taking to address climate change, and them moved into it's internal operations to consider how an insurer would deal with risks relating to climate change in its FCR and internal plans, policies and documents.

The final parts of the question compared the possible reactions to a climate change report by different insurers, aiming to focus on each insurer's unique key risks and concerns.

Overall, the question seemed to have been answered quite strongly. Considering the relevance of the subject matter, many candidates felt comfortable to identify common points the question was looking for. However, only the strong candidates were able to go past the bookwork points to show the judgement required to demonstrate fitness to practice.

Exam technique seems to be a key challenge for some candidates with many answers being too high level, without much descriptions, or answering the wrong question.

Part a)

This part asked candidates to identify the stakeholders that would be interested in the insurer's response to climate change risks. For each stakeholder, marks were awarded to both why they would be concerned about the lack of attention and excess attention. Given the range of possible answers candidates were typically able to provide enough points to receive a strong response. A key area to improve was when candidates listed only internal stakeholders, demonstrating a lack of breadth required for a strong solution. Several did not even regard the policyholders as a relevant stakeholder. The average mark for this question was 4.4/8

Part b)

Being asked to comment on the how FCR's deal with climate change risk, this part was very specific to ask why there would not be references to climate change. Most candidates adequately described the purpose of the FCR, but unfortunately, many candidates did not pick the specific question up and were too general in their responses. For example, many candidates justified why climate change was implicitly discussed in the FCR but did not them circle back to the question and answer why. Others instead criticised the company for ignoring the risk without recognising there were valid reasons for not explicitly discussing climate change in the FCR. The average mark for this question was 2.5/5

Part c)

Exam technique seemed to again be a key issue in this part, that looked to test the candidate's breadth of knowledge on the internal operations of a general insurer. Asked to consider an insurer would address climate change in its internal plans, policies and documents many candidates were able to list the typical areas actuaries would be involved in. However, few candidates went past pricing and risk to talk about disaster recovery plans and investments. Further, candidates missed out on marks by not answering the second section to this part which asked how these documents would be used in the company. The average mark for this question was 2.5/5

Part d)

This part required candidates to compare the key risks and concerns three different insurers would have in response to a new study that showed revised projections to temperature and sea levels. Although most candidates were able to identify some of the key issues, many were too general in their responses and as a result would have very similar points for each insurer, or even replicating verbatim between the insurers. Only stronger candidates were able to identify the differences in risk appetites and exposures, and responses between the specialist commercial, and general personal lines player and a new alternative lines start-up. Very few candidates drafted notes to insurers, missing out on easy marks for this contextual part of the question. The average mark for this question was 3.7/6

Part e)

As a continuation of part d, candidates were asked to discuss how the insurer could manage climate change risks. The question allowed candidates to be quite broad in their responses, asking for both how the insurance industry would deal with the risks, and each insurer's individual response. Very few candidates identified this as a risk management question with a focus on the management options to a risk, such as retain, reduce, etc. Instead candidates dived into solutions for the risk too quickly, and as a result did not demonstrate a breadth of possible responses. Some candidates were able to provide lengthy responses that discussed only pricing and underwriting solutions. By comparison, strong candidates referenced the ERM process and were able to discuss a much greater breadth of the insurer's options. The availability and cost of catastrophe reinsurance was well presented but few if any responses showed an appreciation that a material part of the climate change cost impacts would be from more intense regular weather. The average mark for this question was 3.7/8.

Question 3

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**74.0**	**68.7**			
Strong Pass	45.5	42.2	61.5%	7	12%
Pass	40.0	37.1	54.1%	17	29%
Slightly Below Standard	36.0	33.4	48.6%	7	12%
Below Standard	33.0	30.6	44.6%	7	12%
Weak	25.0	23.2	33.8%	10	17%
Showed Little Knowledge	1.0	0.9	1.4%	8	14%
Did Not Attempt	0.0	0.0	0.0%	2	3%
Maximum Mark	58.5	54.3			
Average Mark	34.9	32.4			
Standard Deviation	11.8	10.9			
Co-efficient of Variation	0.34	0.34			

The overall pass rate on this question of 41% being the highest of the three questions in this exam. The length of the question and being third may have meant time pressure impacted some students' performance who had brief answers in the later sections.

Most candidates answered questions which required workbook responses very well, for example. These elements were part a's definition of long-tail, part c's definition of Prescribed

Capital Requirements and part f's reasons for purchasing reinsurance as well as part g(i)'s types of expenses

However, many students struggled to apply the context of the question when answering questions which required more complex judgements. In this case, many candidates stated answers that were generally true but did not apply to this question. Examples are:

Part g(i): This insurer is a self-insurer and provides insurance to its centres. Hence, it does not incur acquisition or commission expenses

Part g(iii): This insurer is a self-insurer and provides insurance to its centres. Hence, the insurance is not a loss leader

There were a few common difficulties for some sub-parts:

Part b: Many students focused on whether the data was a complete data set (e.g. missing fields) rather than analysing whether the data set represented the full risk profile (e.g. number of years, range of claim amounts etc.)

Part d: For the few students who could calculate the 99.5% value of claims, most forgot to subtract it from the 75th percentile as capital held is the excess above this amount.

A few students attempted to calculate PCR based on the GPS

Part f: Some students suggested a surplus proportional reinsurance, which is typically used for Property class, not Liability class

Part g(i): Many students gave highly generic responses

Part g(ii): A few people were confused and thought the question is asking them to allocate margin between shopping centres. Many students just wrote down the equation of premium.

Part g(iii): Many students approached this question with a shotgun answer

Part h(ii): Almost all but few students recommended to self-insure and did not pick up on the cost of self-insurance. Surprisingly virtually no students identified the option of self insuring by purchasing cover with a much higher excess and were focused on utilising the captive insurer that was owned by the company because it was given in the question. This option would be something that would be a preferable solution and wasn't identified and highlights the challenges of candidates needing critical thinking during the exam.

COURSE 5B INVESTMENT MANGEMENT & FINANCE

1. Summary

1.1. Course Overview

The aim of the 5B Investment Management and Finance Course is to provide the knowledge, skills and judgement necessary to understand the pricing and modelling frameworks for derivative securities, including exotic options, as well as to tackle a range of practical financial problems related to such pricing / modeling frameworks. The course also equips candidates with an understanding of different derivative types, capital market theories and aspects of quantitative risk management.

1.2. Assessment

The assessment model is broken down into two parts:

Forum Participation	10%
Long Answer Question Exam	90%

1.3. Pass Rates

26 candidates enrolled this semester. Of these, 0 withdrew and 0 were absent for the exam, leaving 26 sitting the exam.

It is proposed that 5 candidates be awarded a pass, which implies a pass rate of 19%. Table 1 shows the historical pass rates for this subject:

Table 1 – Course Experience

SEMESTER	SAT	PASSED	PASS RATE
C5B Semester 1 2018	26	5	19%
C5A Semester 2 2017	21	3	14%
C5B Semester 1 2017	33	7	21%
C5A Semester 2 2016	43	23	63%
C5B Semester 1 2016	34	4	12%
C5A Semester 2 2015	49	10	20%
C5B Semester 1 2015	24	15	63%
C5A Semester 2 2014	32	17	53%
C5B Semester 1 2014	24	7	29%
C5A Semester 2 2013	41	21	51%
C5B Semester 1 2013	37	21	57%
C5A Semester 2 2012	30	17	57%
C5B Semester 1 2012	22	13	59%

The 19% pass rate for this exam is generally in line with pass rates for 5A and 5B for the past few years. Most candidates seemed to have struggled to explain course knowledge under examination conditions, and in addition unable to use their knowledge in a way that is relevant to the practical applications. This is most evident in Questions 1 and 2, which had greater focus on practical applications of derivative theories.

This exam attempted to balance practical knowledge, numerical computations and theoretical understanding applicable to the syllabus. Question 3, which focused on the mathematical theories of financial derivatives, was best answered, in contrast to previous years where candidates struggled with technical theory questions. This demonstrates a noticeable improvement in the overall emphasis on the mathematics of the course and greater understanding by candidates in general.

On the other hand, Q1 and Q2, which integrate numerical computations with applications of derivative theories to real world business problems, with more complex judgement, were less well answered. Most candidates struggled with numerical computation under examination conditions, and finally were unable to "connect the dots" to convert the theory and computation into any form of meaningful business discussions. It is very evident from the quality of the candidate responses that most of the candidates do not have sufficient practical exposure to the use and management of financial derivatives.

2. Assessment

2.1. Overall Performance

Online forum participation was very good this semester, with every student receiving the full marks for participation.

The raw pass mark for this exam was set at 87 (out of 200) marks; 2 candidates clearly passed and there were 3 borderline assessments (before adjustments). After special adjustments, and considerations for the distribution of the raw marks (students found this exam difficult), the pass mark for the exam was lowered to 86 marks (out of 200) marks. All 3 borderline cases were passed, considering the overall quality of their answers. 5 candidates passed overall.

The Examiners required that, at minimum, a passing candidate must demonstrate sufficient understanding of the key concepts in at least 2 out of the 3 questions in this exam. In other words, each candidate's final grade was decided based on a holistic assessment of their performance. Getting an E grade in any particular question by itself did not imply a candidate would automatically fail this course. However, any dangerous statements made by a candidate were noted by markers and did play an important consideration in deciding whether a candidate was considered fit to practice (a requirement for passing this exam).

2.2. Exam Question by Question Analysis

Question 1

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**	**60.0**			
Strong Pass	30.0	30.0	50.0%	0	0%
Pass	26.5	26.5	44.2%	1	4%
Slightly Below Standard	23.9	23.9	39.8%	1	4%
Below Standard	20.0	20.0	33.3%	2	8%
Weak	16.0	16.0	26.7%	5	19%
Showed Little Knowledge	1.0	1.0	1.7%	17	65%
Did Not Attempt	0.0	0.0	0.0%	0	0%
Maximum Mark	26.5	26.5			
Average Mark	13.9	13.9			
Standard Deviation	5.7	5.7			
Co-efficient of Variation	0.41	0.41			

The pass rate for Q1 was very low on a standalone basis, with only one candidate out of 26 passing.

The question initially focuses testing candidates' foundational knowledge of financial hedging, both in terms of theory and practice. The questions ask the candidates to identify financial risks to be hedged and applicable derivative instruments.

The question then tests the candidates' knowledge of the Black-Scholes option in the form of an option on a portfolio of bonds, and requests candidates provide derivations of the implied volatility (both in terms of the analytical formulae as well as the actual computation using real-world data) appropriate for the various options.

Finally, the remainder of the question covers theory and applications of concepts such as convexity adjustment, LMM simulation, and business assessment of derivative strategies.

Part 1 a): This question is straight forward bookwork, where candidates are asked to identify financial risks to be hedge and recommend appropriate hedge strategies. The question specifically requested that candidates not simply list derivative instruments, but identify holistic derivative strategies. Most of the candidates failed to note this explicit instruction in the question. A material portion of the candidates were able to pass this component, with one candidate obtaining full marks.

Part 1 b): This question is also straight forward bookwork, where candidates are instructed to explain the basics economics and risks of a (FX) forward contract. Surprisingly, the majority of the candidates were not able to do so with conviction. In particular, many candidates failed to notice that forward contracts have economic costs, despite not having any upfront cost.

Part 1 c): This question asks candidates to derive the mathematical relationship between bond volatility and interest rate volatility, and thereby compute the volatility to be used in the Black option formula for a bond option, using a swap rate volatility surface. Apart from two candidates who were able to score almost full marks in this section, the rest of the students generally struggled with both the theoretical and computational aspects of this

question.

Part 1 d): Part d) is an extension of part c) where the candidates are requested to derive mathematical relationships between foreign bond volatility and interest rate volatility / FX volatility, and thereby compute the volatility to be used in the Black option formula for a foreign bond option, using swap rate volatility surface and FX volatility surface. A couple of candidates made reasonable attempts, while most candidates did not attempt the question.

Part 1 e): This part tests the candidates' understanding of diversification and thereby the concept of macro hedging holistic residual risks. No candidates were able to make this connection, despite this being a fairly straight forward bookwork question.

Part 1 f): Part f) assesses candidates' understanding of the convexity adjustment and its relevance to the context of the bond option in the question. Many candidates were able to provide the textbook definition of the convexity adjustment, but without being able to explain the relevance to the question. In particular, most candidates were not able to identify that the convexity adjustment is actually not required for this application

Part 1 g): This part tests the candidates' knowledge and understanding of option valuation through simulation using the LMM. Many candidates failed to appreciate that the question can be answered without actual theoretical understanding of the LMM, and therefore skipped the question. Of those who attempted, some were able to obtain 50% of the marks allocated to the generic steps of a simulation. Almost no candidates were able to explain the relevance of LMM in the context of simulation.

Part 1 h) This is a catch-all question to allow students to identify and explain risks and issues associated with the proposed derivative solutions. Most candidates made decent attempts. It is worth noting however that from the answers, many candidates appear to not appreciate the fact the question was about balance sheet hedge instead of cash flow hedge.

Question 2

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**	**60.0**			
Strong Pass	25.5	25.5	42.5%	2	8%
Pass	20.5	20.5	34.2%	0	0%
Slightly Below Standard	18.5	18.5	30.8%	1	4%
Below Standard	9.0	9.0	15.0%	5	19%
Weak	5.0	5.0	8.3%	8	31%
Showed Little Knowledge	1.0	1.0	1.7%	9	35%
Did Not Attempt	0.0	0.0	0.0%	1	4%
Maximum Mark	28.5	28.5			
Average Mark	8.2	8.2			
Standard Deviation	7.5	7.5			
Co-efficient of Variation	0.91	0.91			

The pass rate for Q2 was very low on a standalone basis, with only two candidates out of 26 passing. Most candidates were not able to grasp the concepts / main ideas assessed in the questions at all.

Question 2 assesses candidates' understanding of the replicating portfolio theory, i.e. the ability to replicate a put option position using futures and cash, as well as quantitative risk management of options. In particular, a portion of the questions explores candidates' understanding of the key derivative Greeks (delta, gamma, vega), including actual numerical calculations for candidates to derive the volume of futures contracts required to replicate a particular option (delta) position.

Part 2 a): This question is mostly bookwork, where candidates are asked to explain fundamental option concepts such as option moneyness, option tenor, option time value, and option Greeks in the context of a simple 3 month option strategy. Surprisingly, virtually no candidates were able to answer this question; the highest mark out of 5 was only 0.5. The examiners suspect that the candidates, while familiar with the fundamental terminologies, were not able to relate them to actual business context and applications.

Part 2 b): assesses candidates' understanding of the differences in delta and gamma of options of different tenor. These are very fundamental and important concepts. Some candidates were able to touch the surface of the answers, but nobody was able to fully answer the question. Most candidates struggled to connect the Greeks with the context of the question. The highest mark out of 4 received was only 2.

Part 2 c): This part tests the candidates' ability to perform a simple delta hedge of an option with futures position using numerical information provided. The key to the question is to appreciate that delta can be numerically estimated by small shocks to the underlying asset values. The half a dozen candidates work understood these fundamental concepts and were able to receive close to full marks for this part. The remaining candidates struggled and received very few marks.

Part 2 d): is very similar to part c), but tests further the understanding of the candidates to flexibly use the trading grid to determine option sensitivities, once a market shock has already taken place. The same half a dozen candidates work understood these fundamental concepts were able to receive close to full marks for this part. The remaining candidates struggled and received very marks.

Part 2 e): This question assesses candidates' abilities to clearly identify risks being hedged and not being hedged by a proposed derivative strategy. The risk not hedged in this case is FX risk. It was poorly attempted by the cohort and the highest mark awarded out of 3 was only 1.5.

Part 2 f): This question assesses candidates' understanding of the difference between implied and realized volatility; in particular one needs to realize that physical option is priced off an implied volatility, and hence vega risk; but replicating strategies are only impacted by the realized volatility, and therefore carry no vega risk. Almost no candidates appreciated these subtle technical difficulties.

Part 2 g): Part g) tests the candidates' understanding of the different methods of quantifying tail risks of a derivative strategy. While it is true that the lognormal distribution often leads to analytical solutions of risk measurement, parametric methods do not apply in this case, due to the rebalancing of the option tenor as noted in this question. Apart from a few candidates who made reasonable attempts at the question, most answered the question very poorly.

Part 2 h): This was a catch-all question to allow students to identify and explain risks and issues associated with the proposed derivative solutions. It is suspected that most candidates failed to make decent attempts due to poor time management.

Question 3

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	**60.0**	**60.0**			
Strong Pass	32.0	32.0	53.3%	4	15%
Pass	26.0	26.0	43.3%	4	15%
Slightly Below Standard	23.4	23.4	39.0%	3	12%
Below Standard	16.0	16.0	26.7%	7	27%
Weak	10.0	10.0	16.7%	6	23%
Showed Little Knowledge	1.0	1.0	1.7%	2	8%
Did Not Attempt	0.0	0.0	0.0%	0	0%
Maximum Mark	43.5	43.5			
Average Mark	21.6	21.6			
Standard Deviation	9.0	9.0			
Co-efficient of Variation	0.42	0.42			

The pass rate for question 3 was 27%. This question focused on examining the candidate's understanding of mathematical theory applicable to pricing options. The question focused on deriving results related to pricing a call option with stochastic interest rates.

Part 3 a) i):

This question was straightforward bookwork. Candidates were asked to explain in words how to value an option using a binomial tree framework. Perhaps the only challenging aspect to this question was that it required the candidate to be able to explain clearly in words how to price an option. In recent past 5B exams, candidates have struggled with questions asking how to explain technical option pricing concepts in words. As expected, many students scored 3 out of 3 marks.

Part 3 a) ii):

This part tested the candidate's ability to reason about the relative pricing of Asian options with arithmetic average payoffs compared to European option payoffs. Without resorting to mathematics, it should be intuitive that options with more volatile payoffs will be more expensive, all else being equal. This question was not well answered. Most students scored 0 marks for this question.

Part 3 a) iii):

Candidates were asked to identify an effective control variate for the Asian option involving an arithmetic mean of the stock price in the payoff. Realising that an option with an analytical formula with similar payoff is needed, the natural candidate that comes to mind should be the well- known geometric average Asian option. Some candidates were able to identify the geometric average option, while some others received partial marks for suggesting a plain vanilla call option.

Part 3 b):

This question part tested the candidate's ability to identify the application of Ito's lemma, in a not so directly obvious form. Students were asked to show that a discounted option price process was a martingale. Some candidates earned full marks, but many did not identify the question could be easily solved by using Ito's lemma, and instead tried unsuccessfully tried to use expectations to show the process was a martingale.

Part 3 c):

Candidates were required to rearrange the risk-neutral expectation formula for a call

option. It was generally well answered, as expected.

Part 3 d):

This question part appeared in the 5B 2017 exam (with slightly different notation) so it was expected by the examiners that all well prepared candidates should score full marks for this question. The reason for recycling this question was because it is a very important result, and this mean reverting process finds many applications in practice (not just in option pricing, but for risk management and other financial applications) because of its analytical tractability. The majority of candidates scored full marks, as expected and hoped for in setting this question. It was disappointing to see some unprepared candidates scored 0 marks for this question, suggesting they did not even prepare for this exam by properly reviewing the previous year's 5B paper (unsurprisingly, these particular candidates all failed the exam, making this question an effective simple indicator of ability).

Part 3 e):

This part tested the candidate's understanding of the expectation and variance of stochastic integrals. It was considered a straight forward question, with minimal algebra manipulation required. It was generally well answered, with several candidate scoring full marks.

Part 3 f):

This question was bookwork. It asked candidates to verify the basic properties of correlated Brownian motion processes. It closely resembled a practice question in the required text for the course, Baxter and Rennie. Many candidates scored full marks.

Part 3 g):

This question explored basic manipulation of the geometric Brownian motion statistical distribution, with perhaps slightly unfamiliar notation. Most candidates were unable to answer this question, although the examiners do not consider this to be a difficult question. The unfamiliar notation with a correlation component seems to have confused/intimidated the students when answering the question.

Part 3 h):

This part tested the candidates technical understanding of manipulating and working with random variables in risk neutral expectations. It was a purely mathematical question. It was not well answered. Most candidates were unable to tie the hint in the question to reaching a solution, scoring 0 marks. Encouragingly, a few candidates were able to fully answer the question (or at least score close to full marks).

Part 3 i):

This question tested the candidate's ability to reason about an option payoff involving the stock price and a one factor stochastic interest rate discount factor. It was designed to be a challenging question. Hints were provided. This part was very poorly answered. No candidates were able to come close to the model solution, and very few candidates were able to offer any reasonable attempt at answering the questions in this part. Markers were accommodating and awarded marks where any reasonable demonstration of understanding was provided by the candidate (related to the context of this question).

COURSE 6A GLOBAL RETIREMENT INCOMCE SYSTEMS

1. Summary

1.1. Course Overview

The aim of the GRIS 6A course is to provide the knowledge, skills and judgement necessary for an actuary to understand the different systems used to provide retirement incomes and recognise the management issues in areas of regulation, governance and risk management. The course is designed to teach actuaries to use the actuarial control cycle to identify issues and develop solutions. The course is not limited to the Australian retirement income field but has cross-border application.

1.2. Assessment

The assessment model comprised:

Forum Participation	10%
Long Answer Question Exam	90%

1.3. Pass Rates

20 candidates enrolled this semester. 1 candidate withdrew leaving 19 to sit the exam, although 1 candidate left the exam room early and did not attempt all the questions.

It is proposed that 8 candidates pass the course, which implies a pass rate of 42%.
The following table shows the historical pass rates for this subject.

Table 1 – Course Experience

GRIS	Course A Semester 1			Course B Semester 2		
Year	Sat	Passed	Pass Rate	Sat	Passed	Pass Rate
2018	**19**	**8**	**42%**			
2017	20	7	35%	20	7	35%
2016	17	7	41%	15	5	33%
2015	21	10	48%	17	7	41%
2014	15	9	60%	11	7	64%
2013	19	8	42%	17	7	41%
2012	16	5	31%	14	3	21%

The recommended pass rate is in line with the average over the past 6 years (43%) and reverses a concerning downward trend of the past 3 years.

2. Assessment

2.1. Overall Performance

Exam performance was mixed. There were some very good performances but there were also too many poor performances. The course leader was unhappy with many of the

attempts and identified that reading comprehension in particular was lacking. This is disappointing as considerable time was spent by many parties to ensure as far as possible that the questions were worded clearly and succinctly. There also continues a clear trend that practical analysis and complex judgement are lacking. Surely this is a result of the manner in which these candidates are taught to approach exams and is of serious concern. If actuaries wish to be known as critical thinkers and problem solvers, improvement is sorely needed at the grass roots level.

2.2. Exam Question by Question Analysis

Question 1

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	40	60			
(A) Strong Pass	34	51	85%	1	5%
(B) Pass	29	43.5	73%	5	26%
(C) Slightly Below Standard	26.1	39.2	65%	5	26%
(D) Below Standard	21	31.5	53%	7	37%
(E) Weak	18	27	45%		
(F) Showed Little Knowledge	1	1.5			
(X) Did Not Attempt				1	5%
Maximum Mark	35				
Average Mark	24.4				
Standard Deviation	9.1				
Coefficient of Variation	0.37				

Candidates were required to prepare a report for a questionable character seeking to establish a new superannuation product in Australia. Specific information to be addressed was grouped for candidates and, while no particular guidance to this effect was provided, the sections were roughly equal in value:

Regulators / MySuper / APRA focus / Outsourced Services / Business Structure & Strategy

Regulators – bookwork; should have been easy marks

MySuper was covered relatively well, with candidates able to explain and relate to the question. Most candidates recommended adoption of MySuper in the new fund, whereas the marking guide did not; to get a strong mark for this part of the question, candidates had to include additional comments such as appealing to a niche market or using his wealth to finance a strong marketing campaign.

Several candidates (somewhat unexpectedly) provided great answers on APRA reforms! The key to a strong mark was raising the issue of scale and bringing the discussion to member outcomes. Weaker candidates tended to adopt a scatter-gun approach, merely listing various possible reforms.

Outsourced services – bookwork

The hardest part of the question was business structure and strategy and accordingly it was worth slightly more marks. Generally scores were low for this section. It was unclear whether this reflected the wording of the question or a weakness in practical application.

Question 2

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	40	60			
(A) Strong Pass	29	43.5	73%		
(B) Pass	25.5	38.3	64%	3	16%
(C) Slightly Below Standard	23	34.5	57%	3	16%
(D) Below Standard	19.5	29.3	49%	2	11%
(E) Weak	14.5	21.8	36%	9	47%
(F) Showed Little Knowledge	1	1.5		1	5%
(X) Did Not Attempt				1	5%
Maximum Mark	27				
Average Mark	18.0				
Standard Deviation	7.3				
Coefficient of Variation	0.41				

Candidates were required to advise on key aspects of a new superannuation product:
Part (a) in-house or external asset management

Part (b) investment policy for operational risk reserve

Part (c) fund league tables of investment performance

Part (d) trustee conflicts

Part (e) active versus passive investment management

For what was a relatively straightforward question, candidate responses generally were poor. The pass mark recommended was low (in fact the markers commented the lowest they had seen – although curiously still higher than LAQ3) and the pass rate was extremely low (the markers recommended only 3 passes).

While candidates could answer where no thought application was required, they failed to show higher-level thinking when needed, e.g. part (b) generally was answered very poorly, as candidates focussed on simply setting an investment policy and were unable to extend the response to the nature of the ORR investment policy.

Part (e) was generally done well. This was probably because the information to critique was provided as part of the exam paper. For other parts, such as part (c), candidates needed to have a greater understanding of the broad superannuation environment and ongoing discussions as reported in the media. As this is not covered explicitly in the course material, candidates were required to extend their knowledge and understanding, by applying critical judgement and this element was lacking.

I was surprised by the pass mark and pass rate recommendation and this was a principal reason for the inclusion of additional borderline papers. Upon review the examiners determined that there was evidence to increase the grades of candidates. Noting that the ranking of candidates was largely unchanged, I did not feel compelled to make any changes as there was no impact on overall outcome and it would have served only as window dressing to increase the grades. By way of example, the markers had a large bunch of candidates (in fact 9) scoring an E; 3 of those were included in the borderline review and the examiners determined all 3 to be of marginal quality, ie near pass standard. Again, this apparent anomaly in grading had no impact on course results but nevertheless is something that should be investigated to understand why it arose.

Question 3

	Marks Required	Weighted Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Total Marks Available	40	60			
(A) Strong Pass	28	42	70%	4	21%
(B) Pass	22	33	55%	4	21%
(C) Slightly Below Standard	19.8	29.6	49%	4	21%
(D) Below Standard	16	24	40%	4	21%
(E) Weak	11	16.5	28%	3	16%
(F) Showed Little Knowledge	1	1.5			
(X) Did Not Attempt					
Maximum Mark	31				
Average Mark	20.3				
Standard Deviation	7.3				
Coefficient of Variation	0.36				

Candidates were required to compare two possible retirement strategies and demonstrate knowledge of products and concepts with the twist of a fictional assumption (immortality).
Part (a) impact of mortality credits on the strategies
Part (b) calculations for various deferral periods
Part (c) further calculations of the increased return required to equate the two strategies
Part (d) risks, impacts and mitigations in practice

Part (a) generally was handled well by candidates, with the best candidates explaining the options in a way that could be understood by someone without a strong financial background.

In part (b) the best candidates achieved a correct answer with a more comprehensive model than the marking guide. Most candidates failed to realise the survival probability drives the difference between the options directly and this led to solutions In Excel that sometimes were difficult to follow.

Part (c) performance was closely correlated to performance in the question as a whole, which most likely reflected candidates with the highest understanding of the concepts.

In part (d) the poorest responses were simply bookwork "risk" answers; middling responses struggled to link the risks directly to the options in the question; the best responses made the necessary links and by weight of mark this drove a good result for the question.

COURSE 10 COMMERCIAL ACTUARIAL PRACTICE

1. Summary

1.1. Course Overview

The Commercial Actuarial Practice (CAP) Course is designed to teach students to apply actuarial skills across a range of traditional and non-traditional areas by "contextualizing" actuarial solutions or approaches in the wider commercial environment.

The two assessment tasks are:

1. A take-home Post-Course Assignment ("Assignment") on one of the 4 non-traditional topics: Banking, Health, Data Analytics or Environment-Social-Governance (ESG). It is worth 20% of the final mark. Approximately one-quarter of the students were randomly allocated to each topic, except that students were not allocated a topic they had not attended at their Residential course or a topic they had been allocated in a recent semester.
2. An 8-hour Case Study Exam ("Exam") worth 80% of the final mark, under exam conditions with the use of a computer (open book, but no internet access). The candidates had to choose 1 question from the 5 mainstream topics - Life Insurance, General Insurance, Investment, Global Retirement Income Systems (GRIS) or Enterprise Risk Management (ERM), perform all the necessary analysis and prepare a substantial written report.

1. An overall pass requires a total of 50%, without necessarily passing the Exam.

1.2. Pass Rates

80 candidates completed the course. Of these, it is proposed that 43 be awarded a pass, representing a **pass rate of 54%.**

Table 1 – Recent Course Experience

Semester	Sat	Passed	Pass Rate %
Semester 1 of 2018	**80**	**43**	**54**
Semester 2 of 2017	95	58	61
Semester 1 of 2017	90	37	41
Semester 2 of 2016	64	30	47
Semester 1 of 2016	80	45	56
Semester 2 of 2015	81	51	63
Semester 1 of 2015	78	47	60
Semester 2 of 2014	85	49	58
Semester 1 of 2014	86	52	60
Semester 2 of 2013	84	49	58
Semester 1 of 2013	74	39	53
Semester 2 of 2012	71	40	56
Semester 1 of 2012	82	47	57

1.3. Candidate Numbers

A total of 80 candidates were originally enrolled for the CAP course in Semester 1 of 2018. 46 candidates attended the 4-day CAP residential course at MGSM, being all those sitting CAP for the first time. In addition, 6 repeat Sydney candidates attended for half a day as a refresher, of whom 4 passed including the top GI pass at the 4th attempt. The 2 failures were both borderlines.

The candidate numbers and results can be summarised as follows:

	Post-Course Assignment only	Case Study Exam only	Both	Total
Originally enrolled	0	0	80	**80**
Withdrawals	0	0	0	**0**
Absent	0	0	0	**0**
Presented	0	0	80	**80**
Passed	0	0	43	**43**
Failed	0	0	37	**37**

Number of CAP Attempts

The results by number of attempts are as follows:

Attempt	Presented	Passed	Pass rate
1	46	28	61%
2	13	6	46%
3	13	5	38%
4	2	1	50%
5	3	2	67%
6	3	1	33%
Total	**80**	**43**	**54%**

The 8 candidates sitting for at least the 4th time were spread across all Exam topics, but all 3 GI candidates passed.

These figures are similar to the averages calculated over the last 13 semesters, as follows. There is no pattern (such as tapering) after 1 attempt. The pass rates at first attempt do not appear to be correlated with the rate at attempt 2+ across semesters.

Attempt	Presented	Passed	Pass rate
1	610	366	60%
2 - 9	440	221	50%
Total	1050	587	56%

Analysis by Topic

The analysis by chosen Exam Topic is as follows:

Exam Topic	Candidates	No. of passes	Pass rate
ERM	9	6	67%
GI	31	20	65%
GRIS	4	2	50%
Invest	10	3	30%
Life	26	12	46%
Total	80	43	54%

Naturally we are disappointed with the Investment and Life results.

Analysis by Examination Centre

The results by examination centre were as follows:

Centre	Presented	Passed	Pass rate
Melbourne	13	9	69%
Perth	2	1	50%
Sydney	56	29	52%
Sub-total Australia	**71**	**39**	**55%**
Auckland	1	1	100%
Beijing	1	0	0%
Hong Kong	3	2	67%
London	2	1	50%
Singapore	2	0	0%
Sub-total Overseas	**9**	**4**	**44%**
Total	**80**	**43**	**54%**

All these results are reasonable, accepting the volatility introduced by low numbers.

While Auckland literally takes the Prize, the Melbourne result is pleasing after 5 semesters of below-average pass rates. Although I conducted a half-day CAP refresher in Melbourne for candidates who had failed multiple times, most of the passing candidates did not attend.

Course Administration

2.1. Course Outline

The overall objectives of the CAP course are to enable students to:

- Apply actuarial skills across a range of traditional and non-traditional areas by "contextualising" actuarial solutions or approaches in the wider commercial environment;
- Apply ethical concepts, corporate governance requirements and actuarial professional standards when writing a report; and
- Successfully communicate the actuarial solutions or approaches to a range of audiences.

Given these objectives, the assessment for the course is focused on the practical application of judgment and on the written communication skills of the students, rather than on bookwork. The two assessment tasks are:

1. A take-home Post-Course Assignment ("Assignment") on one of the 4 non-traditional topics (Banking, Health, ESG, Data Analytics), distributed after the 4-day residential course, for completion within 2 weeks. The Assignment is worth 20% of the final mark. The result and feedback were supplied to candidates 1 week prior to the Exam. The students were randomly allocated to each topic, aiming for approximately one-quarter to each topic, but subject to:
    a) a check that repeat candidates are not allocated to the same topic 3 times in a row; and
    b) ensuring that no candidate was allocated a topic they had not attended at their Residential course. This is necessary because Data Analytics has only been offered at the latest 3 Residentials, and because candidates at those 3 Residentials have had some choice of topics.
2. An 8-hour Case Study Exam ("Exam") worth 80% of the final mark, under exam conditions with the use of a computer (open book, but no internet access). The candidates had to absorb the question material, choose 1 from the 5 mainstream topics (Life, General, Investment, GRIS, ERM), perform all the necessary analysis and prepare a written report (typically 10 to 15 pages plus any appendices).

The pass mark is 50%, which is regarded as equivalent to the 60% pass mark adopted for the other part III courses.

2.2. Examiners

The examiners for this semester were:

Chief Examiner: Bruce Thomson

Assistant Examiner: Matthew Ralph

2.3. Course Leader

The Course Leader and Faculty Chair for this semester was: David Service

2.4. Preparation of Case Studies

Case studies were prepared by the Course Presenters in the 9 topic areas listed below. Each was designed to be completed within 8 hours under exam conditions, even though the 4 non-traditional topics were completed as a take-home assignment. Each was fine-tuned in consultation with the Chief Examiner, formally scrutineered, and signed off by the Examiners.

The 5 traditional-topic questions aim to be practical within the subject area, without necessarily being entirely and strictly within each Part III syllabus.

Topic	Course Presenter / Author
Health	Andrew Gale
Banking	David Service
Environment	Naomi Edwards
Data Analytics	Colin Priest
ERM	Tim Gorst
Life Insurance	David Service
Investments	Gaurav Khemka
GRIS	Vivian Dang & Young Tan
General Insurance	Colin Priest

Marker 1 for each topic was the author as above. David Service was Marker 2 for the 7 topics for which he was not Marker 1, in order to provide a standardizing view across all topics. Garry Khemka was Marker 2 for Banking, while Aaron Bruhn was Marker 2 for Life. Both Garry and Aaron have good familiarity with CAP.

This was Tim Gorst's first semester in charge of ERM, and Naomi Edwards' final semester for ESG. Next semester, Sharanjit Paddam takes over for ESG following a handover briefing.

3. Post Course Assignment Results

Although marks and grades were given for the Post-Course Assignment, a pass/fail decision was not required for each candidate; this simply formed 20% of their overall mark.

Final scaled marks ranged from 38% to 86% with an average of 59%. Candidates were only given a grade (Fail, Pass, Credit, Distinction, High Distinction) but were also given a copy of their Assignment with marked-up comments from the Marker. We believe these comments are particularly useful to candidates.

68 of the 80 candidates were awarded a "pass" mark of 50% or more, with 8, 1, 1 and 2 failures in Banking, Data Analytics, ESG and Health respectively. (Comments on Banking in s3.1 below.)

It was suggested to candidates that a Credit or better (as achieved by 50% of candidates) was a better indication of likely overall success. However, the correlation between Assignment and Exam marks remains low.

3.1. Banking

The Banking case study required candidates to advise the Capland government Treasurer on options to help reduce the risks being taken on by Capland banks in the face of booming residential property prices and investor lending.

This was generally poorly answered, with 50% failing on raw scores. Many failed due to assuming Australian situations applied, even when told specifically in the question how Capland was different.

3.2. Data Analytics

The Data Analytics case study required candidates to advise a retail bank about negotiating discounts for personal loans. The data provided for analysis was from a trial where discounts were randomly granted, albeit in some cases related to what discount had been requested.

Many assertions were made without evidence and seeking growth rather than profitability was a common weakness.

3.3. ESG

The ESG case study required candidates to advise a government Minister on the financial benefits of random drug testing for recipients of unemployment benefits, where positive tests are followed by drug counselling and benefit reductions.

The question was a good discriminator, with a wide and even spread of raw marks.

3.4. Health

The Health case study required candidates to develop an experimental model for the Health Department, to forecast diabetes prevalence and the impact of increasing diabetes prevalence on future mortality.

The question was well answered, with a good spread of marks and only a few candidates given failures.

4. Exam results

4.1. ERM

The ERM Exam required candidates to advise a superannuation fund trustee in respect of a new operational risk management framework. They were given a detailed history of operational risk events to consider.

As is often the case with ERM, those candidates who failed tended to provide generic recommendations that were not specific to the case in hand.

4.2. GRIS

The Exam for Global Retirement Income Systems required candidates to advise a large superannuation fund on whether to introduce a pooled lifetime income stream product, with shared mortality and/or investment experience. Comparison with the Mercer LifetimePlus product was required, and an option was to white-label the Mercer product.

With only 4 candidates it is difficult to make broad judgements on the quality of answers.

4.3. General Insurance

The GI exam required candidates to advise a union leader on the recent performance of a general insurance company and provide recommendations to share with the employer. Candidates needed to consider the situation through the eyes of both the employees and company.

31 candidates chose this topic, and 20 or 65% passed. Candidates who failed mostly missed one of the key components requested for the report, or failed to deal adequately with the nuance of advising a union that must negotiate with an employer.

4.4. Investment

This case required candidates to design an investment product with a guarantee backed by options or capital. There were no good answers received, with 51% being the top mark awarded.

While products were well designed, none allowed satisfactorily for the significant upfront cost of a put option. Those who passed at least developed sensible comparison metrics and communicated their findings well.

4.5. Life Insurance

The Life case required candidates to design a bonus remuneration package for the executive of a life company. It had to be based on performance against KPIs, with consideration of total profit, deferral and conflicts of interest.

Some good practical ideas were advanced, but poorer students tended to suggest impractically high bonus levels or not give clear examples.

There was a broad range of marks, but many were bunched around or just below the pass mark. The pass rate of 46% was disappointing and was only achieved with 2 small positive adjustments.

Although this was not a "straight" life insurance question on reserving or premium rating, nevertheless it was set in a life insurance context and required the application of life knowledge and principles to produce a sensible answer. Comments (below) mentioning naïve or impractical answers may suggest that candidates found it difficult to understand "the big picture", but sadly such comments have been just as common regarding CAP Life candidates in recent semesters.

END