

Private and Confidential

Report to Council from the Board of Examiners

*2005 PART III
SEMESTER ONE
EXAMINATIONS
REPORT
(STUDENT VERSION)*



Institute of Actuaries of Australia

Publisher

The Institute of Actuaries of Australia
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July 2005

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SUMMARY

Examination Administration

The Semester one 2005 Part III examinations of the Institute of Actuaries of Australia (“Institute”) were held between 16 and 20 May 2005. Candidates attended the examinations in Australia (Sydney, Melbourne, Brisbane, Adelaide, Canberra and Perth) and overseas (New Zealand, Hong Kong, Singapore, Malaysia, Korea, Japan, United Kingdom, USA, Taiwan, Sri Lanka and Bermuda). This is the first time that twice yearly examinations have been held. The table below shows the number of candidates sitting each exam over recent years. The slight reduction (5%) in the number of candidates sitting in the latest period reflects the change in exam structure (to two separate modules, which can be taken in separate examination periods) and that candidates now have the option of sitting each subject twice each calendar year.

Table A: Candidate Numbers Sitting by Part III Subject (old courses)

	Subject	2000	2001	2002	2003	2004
1	Investment Management	102	92	80	110	136
2	Life Insurance	82	79	86	111	118
3	General Insurance	55	59	73	89	91
4	Superannuation & P.S.	25	23	26	26	25
5	Finance	45	47	68	74	62
	Total	309	300	333	410	432

Table B: Candidate Numbers Sitting by Part III Course (new courses)

	Subject	2004	May 2005
1	Investments	136 ¹	187
2A	Life Insurance	118	61
2B	Life Insurance	114	22
3A	General Insurance	91	68
3B	General Insurance	91	18
4A	Superannuation & Planned Savings	25	19
4B	Superannuation & Planned Savings	25	5
5A	Investment Management & Finance	136 ²	20
5B	Investment Management & Finance	118 ³	10
	Total	432/854⁴	410

1. The 2004 Investment Paper 1 is broadly equivalent to the 2005 Investment Course.
2. The 2004 Investment Paper 2 is broadly equivalent to the 2005 Finance Course 5A.
3. The 2004 Finance Courses 5A and 5B are broadly equivalent to the 2005 Finance Course 5B. In 2004, 62 candidates sat Finance Paper 1 and 56 candidates sat Finance Paper 2.
4. In 2004 there were 432 individual candidates, with a total of 854 enrolments by each paper/course.



Table A reflects numbers of candidates presenting at the exam prior to 2005 (old courses). Table B shows the number of candidates presenting at the exam in the new program. In 2004 candidates sat two papers per subject. (A few candidates did not present for the second paper, in some subjects.) For transition purposes, for the 2004 Life Insurance, General Insurance and Superannuation & Planned Savings courses, Paper 1 now equates to the 'A' component of the new 2005 course and Paper 2 equates to the 'B' component of the new 2005 course. For the 2004 Investment Management course, Paper 1 equates to the 2005 Course 1 (Investments) and Paper 2 equates to the 2005 Course 5A (Investment Management & Finance). For the 2004 Finance course, Papers 1 and 2 equate to the 2005 Course 5B (Investment Management & Finance) with students only requiring to receive a pass in either one of the 2004 Finance papers to be given credit for Course 5B.

Results

Pass Rates

The number of candidates presenting for the semester one 2005 Part III Exams, the recommended passes and the resulting pass rates are shown in the table below:

Table C: Recommended Number of Passes by Part III Course

	Subject	Semester one 2005			Prior Years		
		Sat	Passed	%	2004 ¹	2003	2002
1	Investments	187	45	24%	30%	40%	36%
2A	Life Insurance	61	14	23%	22%	28%	38%
2B	Life Insurance	22	11	50%	26%	28%	38%
3A	General Insurance	68	19	28%	33%	37%	36%
3B	General Insurance	18	9	50%	25%	37%	36%
4A	Superannuation & PS	19	8	42%	24%	23%	31%
4B	Superannuation & PS	5	4	80%	28%	23%	31%
5A	Invest. Man. & Finance	20	7	35%	29%	40%	36%
5B	Invest. Man. & Finance	10	4	40%	52%	42%	35%
	Total	410	121	30%	29%	35%	35%

1. The 2004 Results have been adjusted to include the passes awarded separately for Paper 1 and Paper 2.

The Chief Examiners aim to produce a consistent standard of passing candidates rather than a consistent pass rate from year to year. This semester the overall pass rate of 30% is marginally higher than the overall result of 26% rate obtained in 2004 if only whole subject (rather than Paper 1 and Paper 2) passes are considered. The semester one 2005 result is lower than the 2003 and 2002 results of 35%.

Fellows

If the recommended passes are adopted by the Council, the number of members that will be made Fellows (subject to attendance at a Professionalism Course, satisfying the Practical Experience Requirement and paying any relevant exemptions) will be 7 under the pre-2005 system. This compares with 51 in 2004.



CHAIRMAN'S REPORT

Examination Administration

1.1 The Board

The Board of Examiners oversees the Part III examination process of the Institute of Actuaries of Australia (Institute). The Board of Examiners consists of the Chair and her assistants and the Chief Examiners for each subject, supported by Institute staff.

For semester one 2005 the Chair and her Assistants were:

Chair	Ms Bozena Hinton
Assistant Chair	Mr Wesley Caine
Assistant Chair	Mr Trevor McMahon
Assistant Chair	Ms Kim Cossart
Assistant Chair	Mr David Wong.

The Chief Examiners for semester one 2005 were:

Course 1: Investments	Mr Philip Pepe
Course 2A: Life Insurance	Mr David Ticehurst
Course 2B: Life Insurance	Mr David Ticehurst
Course 3A: General Insurance	Mr Philip Chappell
Course 3B: General Insurance	Mr Philip Chappell
Course 4A: Superannuation & Planned Savings	Mr John Hancock
Course 4B: Superannuation & Planned Savings	Mr John Hancock
Course 5A: Investment Management & Finance	Mr Stephen Jackman
Course 5B: Investment Management & Finance	Mr Ashutosh Bhalerao.

I would like to take this opportunity to thank all of 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. I would also like to thank my assistants, Wesley, Trevor, Kim, and David for their support and untiring efforts in ensuring the overview process of the Chair worked smoothly and that the quality of the examinations and results was maintained.

1.2 Meetings of the Board

The Board met on five occasions. The first meeting was held on 1 November 2004. It was attended by a representative from all Courses (Chief Examiners or Assistant Examiners) apart from Courses 5A and 5B, who were yet to be appointed. The purpose of this meeting was to:

- identify the Chief Examiners and Assistant Examiners for each subject
- discuss the separate roles of the Course Leaders and the Chief Examiners
- outline the responsibilities of Chief Examiners and the timetable for the year
- discuss the examination process in detail and initiate the process for the semester one exams
- discuss the recommendations from the 2004 Board of Examiners' Report.



The second meeting was held on 17 February 2005. It was attended by a representative from all Courses (Chief Examiners or Assistant Examiners) apart from Courses 2A/2B. The purposes of this meeting were to:

- discuss the status of Semester one 2005 examination papers, model solutions and marking guides
- discuss future resourcing of the Board of Examiners and how this could be addressed.
- discuss issues arising from the 2004 examinations.

The third meeting was held on 14 April 2005. It was attended by a representative from all Courses (Chief Examiners or Assistant Examiners) apart from Courses 5A and 5B. The purposes of this meeting were to:

- discuss status of examination papers, model solutions and marking guides
- discuss the marking process, marking day, security of papers and timetable
- discuss how the assignments will be incorporated into the marking process
- discuss resourcing of the Board of Examiners for Semester Two.

The fourth meeting was held on 16 June 2005 and was attended by the Chief Examiners of all courses apart from Course 1 and Course 5A. The purposes of this meeting were to:

- review the process adopted by each Chief Examiner in finalising results
- review the recommended pass lists
- review new Institute policy documents
- discuss the examination process for Semester Two.

The fifth and final meeting was held on 21 June 2005 and was attended by a representative from all Courses (Chief Examiners or Assistant Examiners). The purpose of this meeting was to:

- review the recommended pass lists for Courses 1, 2A, 4A, 4B, 5A and 5B, which were not available at the 16 June meeting.

It is envisaged that four meetings will be held for semester two 2005, with a similar timeframe prior to the exams.

1.3 Administration and Exam Supervision

The Board of Examiners was ably assisted by a number of Institute staff, in particular Mr Ken Guthrie, Mr Brett O'Neill, Ms Carmen Joseph and Ms Katrina McFadyen. Ken, Brett, Carmen and Katrina 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 for the production of this report. They did a great job for semester one 2005 and the Board of Examiners team is indebted to them all.



The Semester one 2005 Part III examinations in Sydney and Melbourne were again run by an external consultancy – Language and Testing Consultancy (LTC). All examinations ran smoothly. Complaints were raised by candidates from the Sydney General Insurance 3B Exam. A conference next door to the exam room meant that it was extremely noisy for approximately 1½ hours of the exam. This was taken into account when assessing candidates. No other complaints were raised in relation to any of the other exam centres (in Australia or overseas).

1.4 Course Leaders

In October 2004, Course Leaders were appointed by the Institute to undertake a variety of tasks relating to Part III education. One of the roles of the Course Leaders was to draft examination questions in consultation with the Chief Examiners. In most cases this worked well although there was a delay for Course 5B due to the late appointment of the Chief Examiner. Also, for some subjects, although ideas for the exam questions were excellent, the subsequent wording and focus of the question required more detailed work.

Another role of the Course Leaders was to draft assignment questions in consultation with each subject Faculty. The Board of Examiners was not involved in this process. In most cases the drafting of the assignments worked well although there was a delay with the release of assignments for Course 1 due to delays in the on-line development material for this component of the course. There were also some delays from Faculties in approving assignments, but this was minimal and students were granted extra time in these cases.

1.5 The Examination Process

The examination process began officially in November 2004 with an initial meeting of Chief Examiners and some of their assistants. The Chief Examiners' assistants are listed in the individual Chief Examiners' reports.

Question setting

The basic framework followed by each subject to setting exam papers is the same. The semester one 2005 Part III examinations were run on an open book basis. Each subject includes rigorous review processes. The general framework used to set examination papers is described as follows:

- The Course Leader drafts the examination questions in consultation with the Chief Examiners.
- Draft exams and solutions are reviewed by scrutineers for coverage and fairness. The scrutineers are a mix of newly qualified actuaries and experienced actuaries.
- At least one scrutineer 'sits' the paper under exam conditions to assess the length of the paper.

- Exams are redrafted after feedback from the scrutineers.
- Draft exams, solutions and marking guides are then submitted to the BoE team for review. The draft exams and solutions are reviewed by two members of the BoE team.
- Exams, solutions and marking guides are finalised by the Chief Examiners and their Assistants.
- The Course Chief Examiners sign off the final examination papers and solutions.
- The BoE team also sign off on the examination papers and solutions.

Exam marking

The general framework used to mark examination papers, grade candidates and determine passes is described as follows:

- Each question was marked by two markers. For Investments, due to the large number of candidates, three markers marked each question, in teams of two. This meant that each marker marked two thirds of the papers. Inconsistencies in marks for a candidate were discussed by the markers and resolved (in most cases), before the results were forwarded to the Chief Examiner.
- Marks were scaled to allow for the fact that some questions were more difficult than others.
- Each candidate was awarded a grade for each question of A, B, C, D or E, where A was regarded as a strong pass and B an ordinary pass.
- Candidates' overall performance was determined using several metrics including total raw mark, total scaled mark, weighted average grade, weighted average rank and number of pass grades per question. The key determinant however was total scaled mark.
- Candidates were ranked based on these metrics, particularly total scaled mark.
- Candidates' assignment grades and marks were added to the exam metrics, with a weighting of 20%.
- Candidates were divided into clear passes, clear failures and a middle group that required further consideration.
- The middle group was reviewed individually by the Chief Examiner. The pass/fail decision was made after assessing the candidate's whole exam paper, his/her performance in the judgement questions, how badly he/she performed in the questions he/she failed and whether they were 'key' areas of the course and his/her performance in the assignments.

1.6 The Assignment Process

Question Setting

The basic framework followed by each course to setting assignment questions is the same and all subjects contain review processes. The general framework used to set assignments is described as follows:

- The Course Leader drafts the assignment.
- Draft assignments and solutions are then reviewed by each Faculty for coverage and fairness.
- Each Faculty signed off the assignments.



Students were given access to the assignments via the specific link on the Institute web site.

At no stage were the Board of Examiners given the opportunity to review or comment on the assignments.

Assignment Marking

The general framework used to mark assignments, grade candidates and determine passes is described as follows:

- Each question was marked only once, with the assignment questions being divided up among multiple markers. Different markers had different marking standards and pass criteria. Course Leaders sample marked 5% of all assignments (which translates to three out of sixty) ensuring that at least one assignment from each marker was sample marked by the Course Leader. Inconsistencies in marks for a candidate were to have been discussed by the relevant marker and the Course Leaders and resolved, before the results were forwarded to the Chief Examiner.
- Marks were not scaled to allow for the fact that some questions were more difficult than others. Course 1 scaled the overall assignment results.
- Each candidate was awarded a grade for each question of A, B, C, D or E, where A was regarded as a strong pass and B an ordinary pass. (The standards being used for the C and D grades for the exams were not applied for the assignments, resulting in a too broad band for the C grade.)
- Candidates' results were based on total raw mark, or total scaled mark for Course 1.

1.9 Examination Centres

Candidates sat the exams in 25 centres both in Australia and overseas (multiple centres in some countries).

Table 2: Candidates by Exam Centre - Semester one 2005

	Number of Candidates
Australia	
Adelaide	2
Brisbane	9
Canberra	6
Melbourne	60
Sydney	229
Perth	1
Overseas	
Bermuda	1
Hong Kong	36
Japan	1
Korea	3
Malaysia	15
New Zealand	8
Singapore	17
Sri Lanka	1
Taiwan	3
United Kingdom	17
USA	1
Total	410



1.10 Exam Candidature

Candidate Numbers

The number of candidates sitting the Part III exams decreased by 5% over the number sitting in 2004, from 432 to 410. The number sitting in Semester one 2005 equalled the number sitting in 2003.

Table 3: Candidate Numbers Sitting by Part III Courses (old courses)

	Subject	2000	2001	2002	2003	2004
1	Investment Management	102	92	80	110	136
2	Life Insurance	82	79	86	111	118
3	General Insurance	55	59	73	89	91
4	Superannuation & P.S.	25	23	26	26	25
5	Finance	45	47	68	74	62
	Total	309	300	333	410	432

Table 4: Candidate Numbers Sitting by Part III Courses (new courses)

	Subject	2004	2005
1	Investments	136 ¹	187
2A	Life Insurance	118	61
2B	Life Insurance	114	22
3A	General Insurance	91	68
3B	General Insurance	91	18
4A	Superannuation & Planned Savings	25	19
4B	Superannuation & Planned Savings	25	5
5A	Investment Management & Finance	136 ²	20
5B	Investment Management & Finance	62 ³	10
	Total	432/854⁴	410

1. The 2004 Investment Paper 1 is broadly equivalent to the 2005 Investment Course.
2. The 2004 Investment Paper 2 is broadly equivalent to the 2005 Finance Course 5A.
3. The 2004 Finance Courses 5A and 5B are broadly equivalent to the 2005 Finance Course 5B. In 2004, 62 candidates sat Finance Paper 1 and 56 Candidates sat Finance Paper 2.
4. In 2004 there were 432 unique candidates, with a total of 854 enrolments by each paper/course.

Candidate Mix

The mix of courses sat by candidates in semester one 2005 has changed somewhat compared with previous years. The new Module 1 Investments had an expected large increase in candidature, as it is compulsory under the new Part III structure. Also, any students transitioning under the old structure, who had already passed one Part III exam had the option of sitting Investments Module 1 (a single three-hour paper) and Module 4 (residential course and a 2 hour exam) or for sitting a different Course (each of which had two three-hour papers). Many thus chose to sit for Module 1 initially. The increase in candidates for Module 1 has mainly been at the expense of the Life Insurance and Finance Courses, which had a decrease of enrolments of approximately one quarter and one half, respectively. The relative enrolments for General Insurance and for Superannuation and Planned Saving remained constant, whilst the absolute enrolments for General Insurance decreased slightly (4%).



In general it was expected that candidate numbers would decrease for Courses 2A/B, 3A/B, 4A/B and 5A/B as candidates switched to sitting the single paper Course 1, rather than a second two-paper subject. Any candidates who passed just one of the papers for Courses 2A/B, 3A/B, 4A/B and 5A/B in 2004 could be expected to enrol in the second paper in semester one 2005. This was only a small number of candidates. As the pass rates for Course 2 (Life Insurance) were so low in 2004, proportionally more candidates may have decided to try Investments, another Course, or have a break this semester.

Table 6: Candidate Mix by Part III Course - Semester one 2005

	Subject	2000	2001	2002	2003	2004	2005
1	Investments ¹	33%	31%	24%	27%	32%	46%
2	Life Insurance	27%	26%	26%	27%	27%	20%
3	General Insurance	18%	20%	22%	22%	21%	21%
4	Superannuation & P.S.	8%	8%	8%	6%	6%	6%
5	Investment Management & Finance ²	15%	16%	20%	18%	14%	7%
	Total	100%	100%	100%	100%	100%	100%

1. Course 1 Investments prior to 2005 was equivalent to Investment Management.
2. Investment Management and Finance prior to 2005 was equivalent to Finance.

Examination Papers and Assignments

2.1 Examination Structure

The structure of the examinations in semester one 2005 was for a single three-hour paper for all nine Modules. The exam was worth 80% of the final assessment.

Each course was assessed individually. That is, a candidate chose to sit (and subsequently passed or failed) only Course A (relating to Module 2) or Course B (relating to Module 3) of the subject. This differs from 2004 and earlier exams where candidates sat for the entire exam (both A and B parts). For the 2004 exams, candidates were awarded a transitional pass for a paper if they passed either Paper 1 (Course A) or Paper 2 (Course B).

2.2 Assignment Structure

The structure of the assignments in semester one 2005 was two assignments for each Module, each worth 10% of the final assessment.

2.3 Examination Standards

In each course there was a mix of questions covering three categories:

- applying bookwork to familiar and unfamiliar circumstances. This category is aimed at testing the candidates' knowledge and understanding (KU)
- problem solving requiring simple judgement (SJ)
- problem solving requiring complex judgement (CJ).

The questions aimed to cover the whole syllabus. In the case of Module 1 Investments the examination was based on the syllabus and a previously determined set of readings. Following review by the Education Council Committee during the course, only readings subsequently graded as "A" or "B" were assessable in the exam.

The standards to be achieved by candidates sitting each course, the principles on which papers are to be set and the marking procedures are set out in the Guidelines to Examiners (an abridged copy of which can be found on the Institute website). To ensure the examination papers had proper balance, guidance as to the proportion of marks given to each category needed to be established. The standards of difficulty as determined by the Chief Examiners at the time they set the papers are set out below, with a comparison to prior years.



Table 7: Standards of Difficulty by Part III Course

	Subject	Knowledge & Understanding		Simple Judgement		Complex Judgement	
		2004	2005	2004	2005	2004	2005
1	Investments	20%	20%	40%	40%	40%	40%
2A	Life Insurance	20%	16%	40%	41%	40%	43%
2B	Life Insurance	20%	19%	40%	40%	40%	41%
3A	General Insurance	20%	21%	39%	40%	41%	39%
3B	General Insurance	20%	20%	39%	40%	41%	40%
4A	Superannuation and PS	28%	26.5%	38%	40.5%	34%	33%
4B	Superannuation and PS	28%	21%	38%	43%	34%	36%
5A	Invest. Managemt & Finance	27%	28%	37%	36%	36%	36%
5B	Invest. Managemt & Finance	27%	22%	37%	41%	36%	37%
	Targets	15% - 25%		35% - 45%		35% - 45%	

2.4 Assignment Standards

The setting of standards for the assignments used the same approach as for the examinations, that is, questions were set covering the following three categories:

- applying bookwork to familiar and unfamiliar circumstances. This category is aimed at testing the candidates' knowledge and understanding (KU)
- problem solving requiring simple judgement (SJ)
- problem solving requiring complex judgement (CJ).

Whilst the target weighting of each category for the exams was essentially 20% KU /40% SJ/ 40% CJ, the target weighting for the assignments was 40% KU /40% SJ /20% CJ. As the exam was only worth 80% of the final assessment in semester one 2005, this effectively reduced the target weighting of the overall assessment to 24% KU /40% SJ/ 36% CJ. This means that a higher component of the assessment was KU ("bookwork") this semester and a lower proportion of the assessment was CJ ("complex judgement").

2.5 Comments on Candidates' Examination Performance

General observations on candidates' performance in each subject are as follows. These observations include my own comments.

Course 1 - Investments

Overall, this year's exam proved to be very difficult for the majority of candidates with only 24% passing. Course 1 can be broadly compared with most of the components, but not at the same level of detail, of Subject 1 for 2004 and prior. (Course 1 was assessed with one three-hour paper, while the previous Subject 1 was assessed by two three-hour papers.) The 2004 and 2003 pass rates for Subject 1 were 29% and 41% respectively. The coverage of this year's exam is considered fair.

The coverage of the breadth of the course and questions relating to somewhat unfamiliar territory were obviously challenging for candidates. 90 out of the 194 candidates who enrolled this year have never previously attempted a Part III subject. These candidates will generally stand a greater chance of failing than more experienced candidates. If these candidates are now disproportionately represented in Course 1 (being a compulsory module), then the failure rate, which would have previously been spread throughout the other subjects, will now be concentrated within Course 1.

Course 2A - Life Insurance

Overall the exam paper acted as a good discriminator, with raw marks ranging from 56.3 to 128 out of 200. This range was significantly narrower than last year (58.5 to 246.3 out of 400). Whilst the exam this year was assessed as marginally harder than last year, as evidenced by the breakdown of question difficulty, overall student performance has improved slightly from performance in prior years.

It is difficult to quantify why the pass rate has remained low in this subject, whilst the pass rate improved significantly in Course 2B. It may be that questions can be set in Course 2A requiring a more holistic overview of the course. Candidates were required to produce an answer that drew on more than a single unit of the course for questions 4 and 6. This seems to present difficulties to many of the candidates (they seem to expect each question only relates to a single unit and only refer back to their texts for that unit). Questions of this nature are much harder to set in Course 2B and therefore appear less frequently.

This year there was less evidence of candidates merely copying points from the textbook and failing to put the comments in context of the question, however, this problem still did exist. Candidates still appear to be unable to allocate their time correctly in the exam or judge how much to write in their solution. Another common failing, despite repeated advice to candidates in the past, was not to structure the answer in the required format. A number of candidates were penalised marks for failing to structure their answer in the appropriate report format. Few markers commented specifically upon poor exam technique but it was quite evident to the examiners when reviewing the borderline candidates. This contributed to the lower pass rate.

Course 2B - Life Insurance

An analysis of the degree of difficulty of this semester's exam suggests that this exam was comparable to prior years. However, it appears to have proven easier to a larger proportion of the candidates. This could be because of easier numerical questions, or less questions requiring practical knowledge, or an easier analysis of profit question. Also, the significant drop in the number of candidates sitting the exam (only 22 compared with 114 last year) may have meant that a more select group presented, perhaps only repeating students. This could also have led to the improved candidate performance.

In general, overall question pass marks were higher than in the past – all were at least 50%. The exam acted as a good discriminator, with raw marks ranging from 68.5 to 136 out of 200. In addition, the exam technique of candidates noticeably improved. Generally candidates from Course 2B displayed better exam technique in answering the question than those from 2A. It is still apparent that some candidates are still not taking the time to read the question carefully and hence were not responding with the correct focus.



Course 3A - General Insurance A

This year's paper had a somewhat greater focus on Unit 1, General Economic and Commercial environment, with questions 1 and 3 devoted to it. The Examiners again attempted to obtain an appropriate mix of questions requiring written explanation and numerical calculation. Numerical calculations formed a significant proportion of the marks in question 4 and a smaller proportion of the marks in question 5.

Judging by the raw marks, this paper appeared to be of comparable difficulty to previous years.

Many candidates demonstrated poor exam technique in areas such as failing to read or answer the question, following a scattergun approach to writing down everything on a topic, or not spending enough time thinking, but instead writing down the first thing that sprang to mind.

Course 3B - General Insurance B

This year's paper was again designed to assess candidates' ability to apply what they had learned from the readings to practical situations. There was a somewhat greater focus this year on Unit 1, Premium Rating, with substantial parts of the first two questions and a small part of the third, devoted to it. The final question was on Unit 4, professionalism. It is difficult to write different questions specifically on this Unit and it seems likely that in future examinations this Unit will be assessed across several questions.

The examiners again attempted to obtain an appropriate mix of questions requiring written explanation and numerical calculation. Numerical calculations formed a significant proportion of the marks in question 4 and a smaller proportion of the marks in question 1. It appears from the raw marks that candidates found this examination less difficult than the corresponding paper in 2004.

Course 4A - Superannuation and Planned Savings A

Overall, 42% of students passed the course, while 26% of candidates received a grading of C for the exam. Last year these percentages were 24% and 40% respectively for the combined course.

As such, this represents an improvement on last year's overall performance. The students who scored an overall C got the basic points but did not go into enough detail or demonstrate they understood how the information in the course could be applied in practice.

The performance from question to question was not dissimilar to last year, apart from Question 2 where students did not do as well generally and Question 3, which had a higher pass rate. The better performance in Question 3 reflected that this was a more straightforward question on a traditional area of the course.

Performance in the financial planning question (Question 5) was better than in the financial planning questions last year, but with a pass rate of 42% was still not high and probably reflected the fact that the question was more straightforward this year. Further, of the 11 students that failed this question, only one managed to obtain a C grade.

Many students did not read the questions or misinterpreted the questions, in many cases providing irrelevant points.

Course 4B - Superannuation and Planned Savings A

Overall, four (80%) candidates passed and one (20%) candidate failed with a D. One student clearly passed and the next three were all borderline. It is difficult to draw conclusions from this or make any comparisons with previous years given the small number of candidates. However, while a large number of candidates have scored C's in recent years, there were no students who scored an overall C this year.

Only one candidate sat both 4A and 4B this time. This candidate passed both papers and was the highest scoring candidate in 4B. Therefore, it is quite possible that the other candidates were all repeating 4B.

In previous years many students in this subject got the basic points but did not go into enough detail or demonstrate they understood how the information in the course could be applied in practice. This year, the borderline students did tend to demonstrate that they had sufficient practical understanding.

Course 5A - Investment Management and Finance

Overall, this year's exam proved to be difficult for the majority of candidates, similar to the experience of previous years. Two of the five questions had a 35% pass rate, and one of the questions had a 40% pass rate. These questions tended to be the ones requiring judgement and possibly practical experience.

The first two questions on the paper had a 65% and a 55% pass rate respectively.

Question four proved to be a good discriminator, with a high standard deviation in addition to low marks. The question tested whether the students really understood multi factor models in portfolio management and some of the mathematics behind them. The information came from a technical appendix in the readings, so it is possible that this was not well covered, but the readings were clear that the course included the technical appendix. With hindsight, it was a very good question that was perhaps too difficult for exam conditions. However, with only a couple of exceptions, whether the candidate passed or failed this question was an excellent predictor on the whole exam.

Course 5B - Investment Management and Finance

This year's exam proved to be quite challenging for almost all students. This may be as a result of the course being offered in its current form for the first time.

The average overall raw mark for the exams and assignments combined was 45%. The average raw mark in the exam only was 39%. These raw marks are similar to Paper 2 of the Finance course last year, where the average was 39%, but much lower than Paper 1, where the average was 51%.

Only questions 2 and 3 were handled relatively well, with the balance of the questions being done poorly.



Results

3.1 Pass Standards

The standards for determining whether a candidate should be granted the status of Fellow of the Institute of Actuaries of Australia are based on whether an individual demonstrates core capabilities required for an actuary practicing professionally in his/her specialty area(s). Candidates are required to demonstrate:

- a strong knowledge of the nature, operations, legislation and current issues of the selected practice area(s)
- a detailed knowledge and understanding of the application of actuarial concepts and skills to the chosen practice area(s)
- an ability to apply judgement to solve problems in the chosen practice area(s) that may be characterised by complexity, varying degrees of clarity of definition and novel or unseen circumstances.

A candidate is not expected to demonstrate these capabilities at the level of an experienced and skilled practitioner. It is unreasonable to expect candidates to demonstrate the degree of understanding of an actuary of some year's experience. Rather, the benchmark is whether the candidate is proficient to commence practicing professionally in his/her specialty area(s). Provided the candidate shows a grasp of the main principles, a pass should be awarded. Conversely, a candidate who demonstrates dangerous misconceptions or misapplication of concepts or ideas is viewed more seriously than a candidate who shows a simple lack of knowledge.

The Chief Examiners in the Part III Courses place greater emphasis on the questions that require the candidate to demonstrate the ability to apply bookwork to specific situations and show judgement to solve problems. When grading borderline candidates, their ability to do well in such questions has a greater bearing on whether they pass or fail. The Chief Examiners however, are very conscious of the fact that it is unreasonable to expect candidates to demonstrate the degree of understanding of an actuary with years of experience. In addition, actuaries are expected to be able to demonstrate their skills to those outside the profession. Candidates are expected to be able to communicate clearly and will be penalised if their answers are not clearly expressed.

3.2 Candidates' Results

Candidates' results in each subject and at each level are set out in the attachments to each Chief Examiner's report. In summary the results are:

Table 8: Recommended Candidate Passes by Part III Course

	Subject	2000	2001	2002	2003	2004	2005
1	Investments ¹	28	30	29	44	39	45
2A	Life Insurance	37	30	33	31	21	14
2B	Life Insurance	37	30	33	31	21	11
3A	General Insurance	17	20	26	33	23	19
3B	General Insurance	17	20	26	33	23	9
4A	Superannuation & P.S.	11	8	8	6	6	8
4B	Superannuation & P.S.	11	8	8	6	6	4
5A	Invest. Mngmt & Finance ²	28	30	29	44	39	7
5B	Invest. Mngmt & Finance ³	14	18	21	31	22	4
	Total (pre 2005)⁴	107	106	117	145	111	n/a
	Total (post 2005)	200	194	213	259	200	121

1 The 2004 Investment Paper 1 is broadly equivalent to the 2005 Investment Course.

2 The 2004 Investment Paper 2 is broadly equivalent to the 2005 Finance Course 5A.

3 The 2004 Finance Courses 5A and 5B are broadly equivalent to the 2005 Finance Course 5B.

4 Pre 2005, only complete (A+B) passes were awarded, so the Total only includes one pass per complete Course.

Table 9: Recommended Pass Rates by Part III Course

	Subject	2000	2001	2002	2003	2004	2005
1	Investments ¹	27%	33%	36%	40%	29%	24%
2A	Life Insurance	45%	38%	38%	28%	18%	23%
2B	Life Insurance	45%	38%	38%	28%	18%	50%
3A	General Insurance	31%	34%	36%	37%	25%	28%
3B	General Insurance	31%	34%	36%	37%	25%	50%
4A	Superannuation & P. S.	44%	35%	31%	23%	24%	42%
4B	Superannuation & P. S.	44%	35%	31%	23%	24%	80%
5A	Invest. Mngmt & Finance ²	27%	33%	36%	40%	29%	35%
5B	Invest. Mngmt & Finance ³	31%	38%	31%	42%	39%	40%
	Total	35%	35%	35%	35%	26%	30%

1 The 2004 Investment Paper 1 is broadly equivalent to the 2005 Investment Course.

2 The 2004 Investment Paper 2 is broadly equivalent to the 2005 Finance Course 5A.

3 The 2004 Finance Courses 5A and 5B are broadly equivalent to the 2005 Finance Course 5B.

The Chief Examiners aim to produce a consistent standard of passing candidates rather than a consistent pass rate from year to year. This semester the overall pass rate of 30% is marginally higher than the overall result of 29% attained last year, and four percentage points higher than the 26% pass rate obtained in 2004 if only whole subject (rather than Paper 1 and Paper 2) passes are considered. The semester one 2005 result is still lower than the 35% rate attained in each of the previous four years (2000 – 2003).



The pass rate in Semester one 2005 for Investments is six percentage points lower than in 2004. The pass rates for Life Insurance 2A and Superannuation 4A have remained steady compared with 2004. The pass rate for Investments and Finance 5A has increased six percentage points. The General Insurance 3A pass rate has decreased by 5 percentage points compared with 2004, continuing a trend of recent years. The pass rates for all the “B” courses (apart from Course 5B) have increased significantly. The main reasons for the higher pass rates in the “B” courses are the lower numbers of candidates sitting and the fact that most candidates are likely to be repeating candidates – new candidates to a course are more likely to start with the “A” course, as reflected by the much higher candidate numbers presenting at each of the “A” exams.

Some observations on the pass rates by subject are:

- The Investments pass rate of 24% is lower than the level of 2000. There are a number of reasons for the lower pass rate in Investments, the major ones being teething trouble in the running of the Investments Course. Also, 90 of the 187 candidates were presenting at their first Part III exam and there was a view from the Course Leader that many candidates were not adequately prepared for the standard of Part III study.
- Life Insurance 2A’s pass rate has declined from 38% in 2002 and 28% in 2003 to 18% in 2004 and 23% in 2005. The Semester one 2005 performance is a five-percentage point increase from the 2004 performance. Based on comments from the Chief Examiner, the fall since 2002 is mainly due to candidates being poorly prepared and having poor exam technique. Also, the exam required candidates to have a practical understanding of the course and this was often lacking.
- General Insurance 3A’s pass rate has declined from 36% in 2002 and 37% in 2003 to 25% in 2004 and 28% in 2005. The Semester one 2005 performance is a three-percentage point increase from the 2004 performance. Based on comments from the Chief Examiner, the fall since 2003 is due to poor exam technique, which has led to more failures.
- Superannuation and Planned Savings 4A’s pass rate of 42% has improved significantly since 2004. It must be noted, however, that this represents 8/19 passing, compared with 6/25 last year, so the difference could be accounted for entirely in statistical fluctuation. Overall exam performance did improve, though the candidates who failed generally did so due to poor exam technique.
- Investment Management and Finance 5A’s pass rate of 35% was higher than the pass rate of 29% for the Investment Management exam in 2004. Only 19 candidates sat the exam in Semester one 2005, compared with 136 for the comparable course in 2004, so it is difficult to draw meaningful conclusions, as again statistical fluctuations become important. It is believed the quality of candidates has remained the same.
- Investment Management and Finance 5B’s pass rate of 40% was lower than the pass rate of 52% in 2004. However, the passing of one more additional candidate would have made the pass rate the same as last year. This difference can be accounted for as statistical fluctuation, due to the low number of candidates sitting the exam (10). Also, Course 5B differs from the other “B” course in that it is equivalent to the 2004 Finance A and 2004 Finance B courses combined. The 2004 5A Course is equivalent to the 2005 Investments Course 1, so candidates may have switched out of Course 5 into Course 1. The resulting difference in candidate mix may have also affected the pass rates.

The range of pass rates by course this year was 23% to 50% (excluding Course 4B where only 5 candidates sat). This is wider than in previous years, which ranged from 18% to 39% last year to 23% to 42% in 2003 and 31% to 38% in 2002. The reason for the increase was the lower numbers of candidates in the “B” courses. If candidate numbers for “A” and “B” courses were considered together, then the resulting pass rates would range from 29% to 37% excluding Investments and 24% to 37% including Investments. Considered this way, the actual range in pass rates between courses is similar to last year.

3.4 Pass Rates by Centre

The pass rates by exam centre were as follows:

Table 10: Comparison of Pass Rates by Centre

	2000	2001	2002	2003	2004	2005
Sydney	35%	37%	37%	40%	28%	33%
Melbourne	27%	38%	32%	32%	38%	33%
Other*	42%	31%	32%	30%	15%	21%
Total	35%	35%	35%	35%	26%	30%

* Other Australian and overseas exam centres

I have examined the pass rates by specialist subject and examination centre. This analysis revealed a number of interesting features, including:

- The overall pass rate for non-Australian examination centres is significantly lower than the overall pass rate for Australian examination centres (21% compared with 33%).
- The pass rate in Sydney, the largest centre with 56% of all candidates, was higher in 2005, compared with last year, though lower than other years.
- A total of 76 candidates sat for examinations in Hong Kong, Singapore, Japan, Korea, Sri Lanka, Taiwan and Malaysia for 8 passes from 76 attempts (11% pass rate).
- There were 4 passes in New Zealand from 8 attempts.

3.7 Fellows

As the Part III Examinations are in transition from the pre-2005 system to the new post-2005 system there are currently two ways in which candidates can qualify as Fellows.

- Under the pre-2005 system, candidates have to pass two courses (two lots of Modules 2 and 3).
- Under the post-2005 system, candidates have to pass Module 1 (Investments) one complete course (Module 2 and Module 3) and Module 4 (Commercial Actuarial Practice).

If the recommended passes are adopted by the Council, the number of members that will be made Fellows (subject to attendance at a Professionalism Course, satisfying the Practical Experience Requirement and paying any relevant exemptions) will be 7. This compares with 51 in 2004.



Recommendations for Semester Two 2005

4.1 Board of Examiners

As this is the first time that Part III exams will be run twice in a calendar year it is proposed that there be two sets of examiners. The recommended constitution for the Board of Examiners for semester two 2005 is as follows:

Chairman and Assistants

Chairman	Mr Trevor McMahon
Assistant Chairman	Ms Kim Cossart
Assistant Chairman	Mr David Wong
Assistant Chairman	Ms Bozena Hinton
Assistant Chairman	Mr Wesley Caine

Chief Examiners

Course 1: Investments	Mr Philip Pepe
Course 2A: Life Insurance	Mr David Ticehurst
Course 2B: Life Insurance	Mr David Ticehurst
Course 3A: General Insurance	Mr Philip Chappell
Course 3B: General Insurance	Mr Philip Chappell
Course 4A: Superannuation & Planned Savings	Mr John Hancock
Course 4B: Superannuation & Planned Savings	Mr John Hancock
Course 5A: Investment Management & Finance	Mr Stephen Jackman
Course 5B: Investment Management & Finance	Mr Ashutosh Bhalerao

4.2 Examination Dates

The dates for the examinations in semester two 2005 are as follows:

Semester 2 2005

Module 1 - Investments -	Mon 31 October am
Module 4 (10) – Commercial Actuarial Practice -	Mon 31 October pm
Modules 2/3 (2A/2B) - Life Insurance -	Tue 1 Nov am and pm
Modules 2/3 (3A/3B) - General Insurance -	Wed 2 Nov am and pm
Modules 2/3 (4A/4B) - Superannuation & Planned Savings -	Thu 3 Nov am and pm
Modules 2/3 (5A/5B) - Investment Management & Finance -	Fri 4 Nov am and pm

4.3 Exam Solutions

The Board of Examiners has agreed to release the semester one 2005 examination papers along with the examination specimen solutions and marking guides. The 2005 examination papers have already been published on the Institute website and it is recommended that the exam solutions and marking guides be released immediately after the release of results on 4 July 2005 or as close to this time as possible.



CHIEF EXAMINERS' REPORTS

Course 1: Investments

Results Summary

194 Candidates enrolled for the 2005 semester one Course 1 exam. Of these, 7 did not sit the exam. The assessment for this year also comprised two assignments each worth 10%. The exam comprised the remainder 80%.

It is proposed that 45 Candidates be awarded a pass, which implies a pass rate of 24%. Although there is no direct course comparison with prior years, course 1 can be broadly compared with most of the components, but not at the same level of detail, of specialist subject 1. The 2004 and 2003 pass rates for subject 1 were 29% and 41% respectively.

In summary:

	Number of candidates
Originally enrolled	194
Absent from exam	7
Sat exam	187
Passed	45
Failed	142

The analysis by examination centre is as follows:

Location	Attended	Pass	Pass rate
Australia	142	41	29%
Overseas	45	4	9%
Total	187	45	24%

Examiners

Examiners for this year were:

Chief Examiner: Philip Pepe
Assistant Examiner: Kumaran Yogaranandan

Degree of Difficulty and Course Coverage of Exam and Assignments

The degree of difficulty of questions and course coverage for the exam is summarised in the table below.



Question	Syllabus Topic	Units	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
1a	1	1	2	0	0	2
1b	1	1	3	2	0	5
1c	1	1	0	3	0	3
2a	2	2	2	5	0	7
2b	2	7	0	0	2	2
2c	2	2	0	2	4	6
3a	2, 5	2, 3	2	2	0	4
3b	1, 2, 3	6	2	2	0	4
3c	2, 1	2, 3, 7	0	2	6	8
4a		4	0	2	2	4
4b		4, 5	0	1	2	3
4c		4, 5	0	2	3	5
4d		4, 5	0	1	4	5
4e		4, 5	0	0	5	5
5a	5	5	0	1	2	3
5b	5	5	0	1	2	3
5c	5	5	2	0	0	2
5d	5	5	1	2	0	3
5e	5	5	0	0	4	4
6a	1	8	3	0	0	3
6b	1	8	0	4	0	4
6c	1	8	2	4	0	6
6d	1	2, 8	1	3	2	6
6e	1	8	0	1	2	3
TOTAL			20	40	40	100

Question by Question Analysis

Question 1

Students were required to describe some of the aspects of the Australian investment market and the impact of these when investing in Australia.

This question was relatively poorly handled, with an average raw mark of 26%.

Part a) was very poorly answered. For part b), some students surprisingly referred to regulators that were restructured several years ago (e.g. the ISC). Some confused the relevant legislation and regulatory body. Many students thought banks were the main participants in capital markets. Many students thought the RBA was responsible for regulating money markets. Many students got the participants in the money and capital markets the wrong way round. Some students listed the regulators and described their scope and legislation without necessarily relating them back to a particular market. Marks were still awarded marks in this case, but not full marks. Part c) was also answered poorly.

Question 2

Students were required to discuss the various items contributing to the performance of Australian debt managers. Students were also required to design an investment mandate taking into account the client's needs.



The question well handled. The average raw mark was 41%.

Students fared particularly poorly in the areas which were not just bookwork. These were mainly parts b) and c). Also, students either didn't read the question carefully or didn't know what to say so simply provided all the information they knew, which is counter productive when under time pressure. For example, part c) required specific aspects of the mandate to be spelt out but many students just put down what would be in any generic mandate, not relating it to the specific client circumstances.

Question 3

For this question students were required to advise on the management of a stable of equity assets diversified across both type and geography. In particular, students were required to consider active management and stock selection in the context of these assets.

This question was poorly handled, with an average raw mark of 26%.

Part a) was a straight forward knowledge based question, which was answered poorly by the majority of candidates. The main error was to describe the features of each equity class rather than the alternative management approaches. Some students tried to answer generally rather than for each class, which did not work, and others took the scattergun approach. Only a small proportion referred to passive investment styles.

Part b) was also a straightforward question. Many candidates wrote down lots of points with a surprisingly large number of them being incorrect (e.g. liquidity as a disadvantage under fund-of-funds approach was often cited).

Part c) was a more judgement based question and was a good differentiator of the candidates. Generally those who did well overall did well in part c). Many students were not confident to write down an answer, choosing instead to state the advantages and disadvantages required in parts a) and b), thereby not getting many marks for this part. Also, many students appeared to have difficulty understanding what was intended by the question and seemed to overlook the text at the bottom of the question after the second bullet point. Finally, some students commented on strategic asset allocation which was not part of the question.

Question 4

This question was a more traditional asset liability modelling question framed in the context of AASB 119. Students were required to outline a model to determine the investment strategy for a defined benefit superannuation fund given the new standard, as well as gauging the impact of this standard on short and long term revenue.

This question was poorly answered, with an average raw mark of 30%.

For part a) many candidates did not realise they were expected to discuss how key economic variables were to be modelled and instead just listed them. Most candidates overlooked mean reversion for yield curve modelling.

For part b) many candidates mentioned or listed but did not describe the main features of the liability model, or provided an indirect example of a relevant feature, without actually



explicitly stating the feature. These were generally afforded half marks. Many candidates provided only one or two features.

Part c) provided the greatest opportunity for easy marks yet many candidates did not identify the equity risk premium component or discuss how this might be estimated. Many included parameters relevant to the liability model and not the asset model.

With respect to part d), many candidates provided a short list of outputs or referred to derivations of the output such as surplus ratios. Few explicitly mentioned the objective of minimising cost (maximising profit) or accordance with the rules of the accounting standard. Many did not mention risk. In general, half a mark was awarded for providing a useful reference to risk and a further half mark awarded for providing a useful metric of risk such as standard deviation.

Many candidates received zero for part e) since many provided answers relevant to investment strategy rather than modelling. Others believed that no change was required to the modelling. Very few candidates mentioned serial correlation.

Question 5

For this question students were required to consider risk management and hedging in the context of a manufacturing company looking to divest itself of one of its subsidiaries twelve months in the future.

This question was poorly answered, with an average raw mark of 36%.

Parts a) to c) had a relatively heavy emphasis on bookwork. Students generally fared well on these parts compared with parts d) and e). With respect to these latter two parts, only a few students really understood what was being asked. For part d) in particular, many students demonstrated a lack of understanding on the very basics of hedging. Overall, many students seemed to demonstrate a lack of understanding of the issues that concern this field.

Question 6

The aim of this question was to test whether students understood benchmarking, as well as the sources of return.

This question was the equal-worst handled question, with an average raw mark of 31%. Overall, this was the most difficult question in the exam. In general, students displayed good bookwork knowledge in parts a) and b). However, many students fell down even here by not listing a sufficient number of points. Parts c) through to e) were much harder, especially c) and e), and most students performed poorly on these. While still an inadequate response, for part c) better students managed to state that the problem related to the interaction term without being able to determine how this might be reduced. Finally, and understandably since this was also the last question, many students simply ran out of time.

Philip Pepe
Chief Examiner

Kumaran Yogaranandan
Assistant Examiner

July 2005



CHIEF EXAMINERS' REPORT

Course 2A: Life Insurance

Results Summary

The May 2005 examinations mark the start of the new Part III syllabus of the Institute of Actuaries of Australia (which involves twice yearly exams of a split course). There were 63 candidates enrolled for the May 2005 exam. Of these, 2 candidates did not present at the exam.

It is proposed that 14 candidates be awarded a pass, which implies a pass rate of 23%. Following the year of transition in 2004, May 2005 represents the first time this course was offered on a stand-alone basis and whilst there are no direct comparatives from prior years, the pass rate is similar to last year but well below the historical norm. Overall pass rates from previous years were as follows:

- 21 candidates passing in 2004 (from 118 sitting the exams), representing a pass rate of 18% (with a further 5 candidates earning a transitional pass for Course 2A).
- 31 candidates passing in 2003 (from 118 sitting the exams), representing a pass rate of 25%.
- 33 candidates passing in 2002 (from 86 sitting the exams), representing a pass rate of 38%.

In summary:

Number of candidates	
Originally enrolled	63
Absent from exam	2
Presented at exam	61
Passed	14
Failed	47

The analysis by examination centre is as follows (adjusting 2004 results for transitional passes):

Location	Attended	Passed	Pass rate
Australia	41	11	27%
Overseas	20	3	15%
Total	61	14	23%

The pass rate has remained low for this subject. Whilst the pass rate is approximately the same as 2004, the proportion of candidates passing this course is actually higher than last year as many of the students who passed the entire exam in 2004 would have failed the first paper last year on a stand-alone basis.



Examiners

Examiners for this semester were:

Chief Examiner	David Ticehurst
Assistant Examiner	Mark Stewart
Assistant Examiner	Owen Wormald
Assistant Examiner	Brett Cohen

Degree of Difficulty and Course Coverage

The analysis of the degree of difficulty of exam questions in the format specified by the Institute is as follows:

Question	Syllabus Aims	Knowledge & Understanding	Straight-Forward Judgement	Complex Judgement	Total Marks
1	2,12	2	4	3	9
2	9,11	8	5	6	19
3	7,8,11,12	0	6	6	12
4	1,4,6,8,9	0	10	8	18
5	5,14	6	2	10	18
6	8,9,10	0	14	10	24
Total		16	41	43	100

The degree of difficulty would suggest that this exam was marginally harder than those from prior years (indicated by the drop in KU and increase in CJ marks). However, the overall allocation was within the permissible range.

Question by Question Analysis

Question 1 (9 Marks)

In this question candidates were presented with a scenario where dollar fee disclosure was introduced for investment products. Three different charging structures for a product along with the likely expense pattern were also provided. Candidates were then asked to recommend a charging structure from a marketing perspective. They were then asked if their recommendation would change from an expense perspective. The final part of the questions asked for other considerations prior to finalising the fee structure.

The overall results were as follows:

	Marks Required	% of total	Number of Candidates
Strong Pass	13	72.2%	5
Pass	11	61.1%	22
Slightly Below Standard	9	50.0%	23
Weak	4.5	25.0%	11
Serious Lack of Knowledge	0.1	0.6%	0
Did Not Attempt	0	0.0%	2



Maximum Mark	13.0
Average Mark	9.2
Standard Deviation	3.3

This question was reasonably well answered as indicated by over 40% of the candidates passing. Parts (a) and (b) presented few difficulties for the majority of candidates. While most candidates provided a clear recommendation (as required) and nominated the preferred fee structure, many drew short in their reasons after one or two remarks. By contrast, a few candidates who nominated an alternative fee structure and gave several valid reasons for their choice scored higher marks, even though they strayed from the preferred structure – there were more marks for valid reasoning than simply for stating a choice.

Most candidates struggled with part (c) with few candidates covering the key points from the solution. However, many did make some other relevant points and earned enough marks to ensure a pass on the question.

More specific pitfalls among candidates included the following:

- While most candidates picked up on high up-front charges and simplicity of a fee structure in (a) and nominated Option 3 as preferred, many failed to comment on the resulting estimated account balance which also favoured that choice, or to consider the pattern of fees and their stability over time. The weaker candidates presented answers from a non-marketing perspective, discussing the viewpoint of the Company's interests or preferences. This indicated either poor exam technique from not reading the question or a lack of understanding of marketing considerations (or could simply be a case of nerves as this was the first part of the first question in the exam).
- While most candidates stated the ideal of a fee structure matching the pattern of expenses in (b) and therefore noted that Option 1 now became the preferred choice, many failed to comment on the potential for an initial strain or to consider the pattern of strain over several years. Almost no one mentioned the ideal for fees to precede the expenses, nor noted the NPV of the fees.
- A disappointingly small number of candidates mentioned the need to carry out cash-flow projections and sensitivity testing as part of their answer to (c), apparently forgetting that "other considerations" would include some discussion of profit criteria and the elements of potential variation in experience that should be included in assumptions and scenario testing. Some candidates mentioned miscellaneous points like "competitor comparisons" or "system constraints" but missed the point of the question, which had developed as a contrast between the marketing and the pricing perspective – profit and its sensitivity to experience assumptions/variations is an imperative consideration.

Question 2 (19 Marks)

This question was about conducting an expense analysis and using the results to determine expense assumptions for a new product. Candidates were then asked how they might use this expense information to determine a charging structure. Prior to finalising the charging structure the CFO announced a cost cutting program aimed at reducing expenses



by 20%. The marketing manager requested a 20% reduction in the charges and candidates were asked to respond to this request.

The overall results were as follows:

	Marks Required	% of total marks	Number of Candidates
Strong Pass	28	73.7%	4
Pass	22	57.9%	17
Slightly Below Standard	18	47.4%	25
Weak	11	28.9%	13
Serious Lack of Knowledge	0.1	0.3%	2
Did Not Attempt	0	0.0%	2
Maximum Mark	31.0		
Average Mark	18.6		
Standard Deviation	7.2		

Questions covering the topic of expense analysis always produce a broad range of appropriate answers. From reviewing a sample of the solutions I do not believe candidates were disadvantaged if their approach differed from that outlined in the solution. However, it was evident from a number of comments made that candidates did not read this question properly, particularly in parts (b) and (c).

As indicated by the figures in the above table, this question was handled reasonably at a basic level by many candidates, and this is reflected in the proportions of candidates passing or slightly below standard.

Candidates covered the majority of the categories required in part (a) but few obtained full marks with most candidates omitting Development expenses. Many candidates included commissions in their conceptualisation of an expense analysis, but were not penalised; they tended to be the ones who failed to think of expenses in the wider context of the question.

Part (b) was less well answered; some candidates failed to follow the logical flow of the question from (a) to (b). In this part many candidates failed to answer the question in relation to the existing products issued and responded in relation to the new product being developed.

Part (c) was not well answered, with the average mark just under 1 out of 3. Many candidates failed to address their answer to the wording in the question, which was quite clear. Candidates generally failed to explain how the analysis on existing products would have to be adjusted to derive assumptions for the new product. Quite a number brought in “cost of guarantee” as an expense issue.

Part (d) was reasonably well answered, with most candidates managing to score marks for relating the expense analysis to the fee structure. A number of candidates again missed the logical flow of the question from the earlier parts on to (d) and most candidates fell short of full marks because they simply stated results rather than including description of the process for getting there. A disappointing number of candidates failed to address the final part of (d), which asked how they would check the adequacy of their fee structure; some

passed over this, others talked about competitor comparison, and relatively few mentioned profit test projections and sensitivity/scenario testing as an explicit answer.

Part (e) was also reasonably well answered with most candidates managing to score marks for straightforward comments but very few gaining over 75% of available marks.

Candidates generally came up with some valid points in part (e) and most answered in the appropriate format. Points from the solution that were often omitted by the candidates included:

- A 20% reduction in fees because of a 20% reduction in expenses would also result in a reduction in the profit margin
- It would be unlikely that commission or investment management expense could be reduced by the same 20%, and as these costs represent a major expense for the company a 20% reduction in fees would mean a reduction in the profit margin.

Question 3 (12 Marks)

In this question candidates were presented with a set of premium rates and the pricing basis for a level term insurance product. Candidates were asked to identify what issue existed within the premium rates and how it might have arisen, why the rates would be inappropriate to use in practice and to suggest ways to resolve the issue and the potential implications that might arise from their suggestions.

The overall results were as follows:

	Marks Required	% of total marks	Number of Candidates
Strong Pass	14.6	60.8%	1
Pass	10.8	45.0%	15
Slightly Below Standard	8.3	34.6%	3
Weak	4.9	20.4%	14
Serious Lack of Knowledge	0.1	0.4%	27
Did Not Attempt	0	0.0%	3
Maximum Mark	14.0		
Average Mark	5.6		
Standard Deviation	4.1		

This question was surprisingly poorly answered and had one of the lowest pass rates. Furthermore over half the candidates were in the weak or SLK category.

In part (a) most candidates could identify the problem with the proposed premium rates but struggled to explain why it arose. Part (b) required a demonstration of some practical knowledge and most candidates struggled with this part. For part (c) most candidates were only able to offer one or two valid solutions (three was required).

Question 4 (18 Marks)

In this question candidates were presented with a scenario where a cure for cancer has been developed (post diagnosis). As product actuary for a medium sized life insurance company selling:

- Term insurance
- Trauma insurance



- iii. Annuities
- iv. Unit linked investment products

Candidates were asked how these products would be impacted in the short term, the long term, what new risks the company might now face and how it could mitigate these risks.

The overall results were as follows:

	Marks Required	% of total marks	Number of Candidates
Strong Pass	25.5	70.8%	6
Pass	21.5	59.7%	15
Slightly Below Standard	17.5	48.6%	18
Weak	9	25.0%	21
Serious Lack of Knowledge	0.1	0.3%	1
Did Not Attempt	0	0.0%	2
Maximum Mark	28.0		
Average Mark	18.3		
Standard Deviation	7.0		

Overall, the question was moderately well answered, with an average raw mark of about 50%. About a third of candidates were awarded a pass grade. The question had reasonable (but not outstanding) discriminating power.

General comments on the answers:

- Most candidates got the obvious points in (a) and (b), but the treatment of trauma business required deeper understanding which exposed the weaker candidates.
- A number of candidates repeated points from part (a) in part (b), although the question said not to.
- Some candidates suggested that sales of trauma products could increase in the long term as customers would try and benefit from a windfall gain. These comments were a concern to the examiners as we would expect candidates to suggest removing cancer from the list of traumatic events. We would expect such comments to be made by members of the public asked this question and not actuarial candidates trying to qualify as an actuary.
- For some candidates it was difficult to tell which mitigating actions in (d) were associated with each of the risks in (c).
- A number of candidates identified that anti-selection and/or moral hazard were relevant issues, but provided incorrect explanations of why these problems might arise. Some candidates seemed to think that trauma sales would increase when the actual need for this cover had reduced.
- Some answers were narrow in focus (concentrating excessively on sales impacts or mortality effects) and thereby missed out on a couple of easy marks.
- Very few candidates showed an awareness of the legal issues associated with changing the terms of existing inforce business (i.e. they assumed either that there were no constraints on changes or that changes to existing business were impossible).

- Many candidates failed to identify the different effects on new business and existing inforce business.
- A few candidates made comments that demonstrated very poor product knowledge
- In parts (c) and (d), a few candidates (fortunately not many) came up with a series of general points (perhaps taken from a “checklist” of risk comments prepared in advance), rather than addressing the specific situation in the question.

Question 5 (18 Marks)

For Questions 5 and 6 candidates were presented with a common scenario where the CEO and some of directors absconded with funds from the statutory fund, leaving the company insolvent and under Judicial Management. Candidates were presented with a simplified balance sheet and the products issued from the various statutory funds.

In Question 5, additional information relating to the asset allocation of the Investment Linked Statutory Fund was provided. The Judicial Manager has asked for advice on the appropriateness of the investment policy. Candidates were asked for what additional information they would request, the appropriateness of the asset allocation, what changes would they recommend and how these changes could be implemented.

Candidates were also asked what considerations should be taken into account in setting the crediting rates for the defined contribution product for the next 3 to 5 years.

The overall results were as follows:

	Marks Required	% of total marks	Number of Candidates
Strong Pass	24	66.7%	4
Pass	17.5	48.6%	18
Slightly Below Standard	14	38.9%	19
Weak	10	27.8%	9
Serious Lack of Knowledge	0.1	0.3%	11
Did Not Attempt	0	0.0%	2
Maximum Mark	27.0		
Average Mark	16.2		
Standard Deviation	7.8		

Overall, the markers found the standard of answers to be only average. However, it was the second best answered question in terms of the number of candidates passing.

In part (a) quite a few candidates were confused between investment returns and investment policy, with a number of candidates requesting historical returns as information required for determining the appropriateness of the investment policy. A number of candidates missed the point that they had to comment on all funds (not just the No.2 fund). Careful reading of the question would have earned them easy marks.

For part (b) few candidates discussed the impact of the assets being below the solvency requirement and how moving to less volatile assets and removal of overseas exposures would reduce resilience requirements and thus improve the solvency position. Many



candidates failed to comment on how they would implement their changes. Poor examination technique and failing to read the question again resulted in easy marks being lost.

Overall, the markers felt that poor examination technique was evident with too many candidates adopting either a "scatter gun" approach and/or copying directly out of the notes/text books. Some more thought would have enabled them to link their notes to the context of the question. This has been a common problem over the past few exams with candidates not realising that when taking the points from the textbook that comments relating it back to the question are required.

Question 6 (24 Marks)

This question refers to the same scenario as for question 5, (where a company is unable to meet its Solvency Requirement following the removal of money from its statutory funds by some directors) focusing on the assumptions for calculating the value of the inforce business. Candidates were asked how and why the assumptions might change from the previous valuation.

The final part of the question (part (e)) asked what other recommendations the consulting actuary might make to the judicial manager, with the key focus of the solution being on restoring capital and managing cashflows.

The overall results were as follows:

	Marks Required	% of total marks	Number of Candidates
Strong Pass	25	52.1%	8
Pass	22	45.8%	8
Slightly Below Standard	17.5	36.5%	15
Weak	12	25.0%	24
Serious Lack of Knowledge	0.1	0.2%	6
Did Not Attempt	0	0.0%	2
Maximum Mark	28.5		
Average Mark	17.2		
Standard Deviation	7.8		

Part (a) asked how and why mortality/morbidity decrement assumptions might be changed as a result of the directors' actions. For full marks, candidates were expected to discuss the possibility of selective lapsing by healthy lives in the YRT products, with minimal change likely for the investment products.

Many candidates focused on claim rates rising as a result of the company's closure to new business and the ageing of the portfolio, without recognising that this did not necessarily represent an increase in the underlying age-by-age assumptions.

Part (b) asked a similar question in relation to lapse/surrender decrement assumptions and was very poorly answered. For 6 marks, it was necessary to discuss the effect on each product line separately, rather than a general statement that lapse rates would increase as a



result of the associated negative publicity. Too many candidates wrote too little for a 6-mark question.

Part (c) turned to likely changes in expense assumptions and was reasonably well answered, although some candidates discussed the effect of acquisition expense write-offs without understanding that this affects operating profit but not the value of in-force business.

Part (d) addressed the impact on economic assumptions and was reasonably well answered. Better candidates discussed the full set of economic assumptions, not just the investment earning rate assumption.

For part (e) many candidates did not use the financial information provided in the question, focusing instead on the powers available to the judicial manager under the Life Insurance Act (providing a legal based answer). Very few realised that selling the non-super YRT business, even at a discount, would enable the Solvency Requirement to be met and the company to continue trading. Only a few suggested trying to recover the missing funds. Overall, candidates who tailored their answers to the situation outlined in the question did better than those who gave generic answers.

David Ticehurst

Chief Examiner – Life Insurance Course 2A, May 2005 Exams

24 June, 2005



CHIEF EXAMINERS' REPORT

Course 2B: Life Insurance

Results Summary

The May 2005 examinations mark the start of the new Part III syllabus of the Institute of Actuaries of Australia (which involves twice yearly exams of a split course). There were 23 candidates enrolled for the May 2005 exam and 22 presented for the exam.

It is proposed that 11 candidates be awarded a pass, which implies a pass rate of 50%. Following the year of transition in 2004, May 2005 represents the first time this course was offered on a stand-alone basis and whilst there are no direct comparatives from prior years, the pass rate is well above those from previous years. Overall pass rates from previous years were as follows:

- 21 candidates passing in 2004 (from 118 sitting the exams), representing a pass rate of 18% (with a further 9 candidates earning a transitional pass for Course 2B).
- 31 candidates passing in 2003 (from 118 sitting the exams), representing a pass rate of 28%.
- 33 candidates passing in 2002 (from 86 sitting the exams), representing a pass rate of 38%.

In summary:

Number of candidates	
Originally enrolled	23
Absent from exam	1
Presented at exam	22
Passed	11
Failed	11

The analysis by examination centre is as follows (adjusting 2004 results for transitional passes):

Location	Attended	Passed	Pass rate
Australia	10	6	60%
Overseas	12	5	42%
Total	22	11	50%

The pass rates are significantly higher than in previous years. Whilst pass rates for overseas locations are often poor compared to Australian examination centres, it is also noticeable that they have improved significantly in this examination session, particularly in Asian locations where the pass rate was 40%.



Examiners

Examiners for this semester were:

Chief Examiner	David Ticehurst
Assistant Examiner	Mark Stewart
Assistant Examiner	Owen Wormald
Assistant Examiner	Brett Cohen

Degree of Difficulty and Course Coverage

The analysis of the degree of difficulty of exam questions in the format specified by the Institute is as follows:

Question	Syllabus Aims	Knowledge & Understanding	Straight-Forward Judgement	Complex Judgement	Total Marks
1	1	3	9	0	12
2	10,11	1	13	3	17
3	1,2,5	5	4	0	9
4	2,3,4	6	4	15	25
5	6,8,9,12 C2A 5	4	8	10	22
6	5,7,9	0	2	13	15
Total		19	40	41	100

The degree of difficulty would suggest that this exam was comparable to those from prior years. However, I believe this exam has proven easier for a larger proportion of the candidates than those in prior years.

Question by Question Analysis

Question 1 (12 Marks)

This question was about calculating the IBNR reserve for a new TPD rider. Candidates were asked how they would calculate the initial IBNR reserve (with no experience), how they might revise their process (5 years later) and reasons for why a large discrepancy might have arisen at that time.

The overall results were as follows:

	Marks Required	% of total marks	Number of Candidates
Strong Pass	18	75.0%	3
Pass	13	54.2%	8
Slightly Below Standard	11	45.8%	5
Weak	6	25.0%	6
Serious Lack of Knowledge	0.1	0.4%	0
Did Not Attempt	0	0.0%	1
Maximum Mark	20.5		
Average Mark	12.0		
Standard Deviation	4.9		



This question was reasonably well answered as indicated by the proportion of candidates passing and an average mark just below the pass mark.

A question being based on the IBNR did catch a number of students by surprise. Common problems encountered by the candidates included:

- a sizeable proportion (around a third) of candidates only picked up half marks on the KU part of (a) due to not answering the question asked
- some weaker candidates confused TPD with DII
- only stronger candidates picked up points about underwriting and company specific factors
- no-one specifically mentioned selection inherent in new business, and hence the adjustment required to industry data
- A number of candidates seemed to address the same point from a number of angles (i.e. paraphrasing) rather than addressing a broader number of valid points.

Question 2 (17 Marks)

This question was about embedded values for the sale of a life insurance company. Candidates were placed as a consulting actuary advising an investment bank. Advice was required as to:

- why different assumptions might be used by the buyer and the seller
- the advantages & disadvantages of using an EV based on discounted cash flows compared to the P/E approach used by the bank
- what is target surplus and whether it should be taken into account in calculating the EV.

The overall results were as follows:

	Marks Required	% of total marks	Number of Candidates
Strong Pass	25	73.5%	4
Pass	18	52.9%	12
Slightly Below Standard	15.5	45.6%	4
Weak	8	23.5%	2
Serious Lack of Knowledge	0.1	0.3%	0
Did Not Attempt	0	0.0%	1
Maximum Mark	26.5		
Average Mark	19.3		
Standard Deviation	5.6		

As indicated by the pass rates in the above table this question was extremely well answered.

Part (a) answers were generally good. However, some candidates mentioned a reason for the different mortality basis was because DOM's underwriting would impact future



experience on this book, which showed a lack of understanding that an EV relates to only existing business written.

Part (b) was generally well answered; students came up with a range of valid answers not covered by the solutions, e.g. sensitivity testing of EV valuation. Some weaker candidates demonstrated poor examination technique by repeating the same reasons as an advantage of one method and a disadvantage of the other.

Part (c) was extremely easy (asking candidates “to explain the concept of target surplus”) and was well answered with most candidates managing to get the mark.

Part (d) offered the candidates to answer with either a “yes” or “no” and then provide reasons supporting their decision. A range of marks was awarded for this question. Most answers differed from the model solutions, with the best answers showing appreciation for the cost of capital involved in holding target surplus. Very few candidates provided a “no” answer with reasons that appeared in the model solutions.

Question 3 (9 Marks)

This question was a very simple Margin on Service valuation calculation requiring the calculation of the policy liability and profit margin. Candidates were then asked to assess the impact on the profit margin from a proposed marketing campaign and the implications in relation to a stated profit target.

The overall results were as follows:

	Marks Required	% of total marks	Number of Candidates
Strong Pass	16	88.9%	6
Pass	12	66.7%	13
Slightly Below Standard	10	55.6%	1
Weak	8	44.4%	0
Serious Lack of Knowledge	0.1	0.6%	2
Did Not Attempt	0	0.0%	1
Maximum Mark	18.0		
Average Mark	12.9		
Standard Deviation	4.1		

Given the ease of the question it was not surprising how well the candidates answered this question.

Most candidates scored full marks for parts (a) and (b).

In part (c)(i) some students argued that as the premium increase was only a short-term change the reduction in premium income should be allowed to emerge as an experience profit. As long as the point was well argued candidates were not penalised for taking this position, which is sometimes used in practice.



In part (c)(ii) very few students noted the contribution that increased sales could make to recover the lost margin.

In part (c)(iii) many students did not interpret the question as requesting a recalculation of the profit margin, but talked about the implications of the change in premiums on the profit margin if it was recalculated in reality. This made it more difficult for students to answer the question, as many such students did not discuss the possibility of the premium change causing a capitalised loss. However, students that did not recalculate the margin but gave a thorough discussion of the possible implications, including the possibility and implications of a capitalised loss were awarded full marks.

Question 4 (25 Marks)

In this question candidates were presented with both accounting information (balance sheet and profit & loss account) and actuarial liability numbers (policy liability, solvency liability, MTV and CTV). The presentation of this material was quite lengthy (1.5 pages) but was well set out and should not have impacted the performance of the candidates.

Using this information the candidates were then asked to calculate the solvency requirement of the company in accordance with AS2.03. Once the requirement had been calculated they were told the company wishes to increase the excess assets above this requirement and were asked to suggest possible actions that could be undertaken to achieve this wish. For each action they were required to explain how this would increase the excess assets and what other business impacts might arise as a result of their suggestions.

The overall results were as follows:

	Marks Required	% of total marks	Number of Candidates
Strong Pass	36	72.0%	3
Pass	30	60.0%	6
Slightly Below Standard	25	50.0%	8
Weak	12	24.0%	5
Serious Lack of Knowledge	0.1	0.2%	0
Did Not Attempt	0	0.0%	1
Maximum Mark	39.0		
Average Mark	27.3		
Standard Deviation	8.1		

This question was answered poorly compared to the other questions in the exam. However, a reasonable proportion of candidates still passed the question. The markers were surprised that candidates had trouble with part (a), which required the calculation of the solvency requirement, particularly in an open book exam. A number of the candidates missed out on the easy marks in part (a), particularly:

- many students were confused about which level the MTV should be applied at (i.e. Related Product Group or Statutory Fund)

- more than half were confused about which expenses to include in the expense reserve, with many including acquisition commission and a couple picked up all expenses
- for the resilience reserve part of the question many of the students failed to re-work the L' and just used what was in the question in total
- for the inadmissible assets reserve only a handful of students commented on the FITB at all.

Only some candidates provided a reasonable answer for part (b). In general the explanations and impacts were where candidates needed to focus for the marks but most of the candidates comments were fairly light for a 15-mark question.

Question 5 (22 Marks)

This question examined the ability of candidates to determine the operating profit for a company writing only annuity business. The operating profit was then required to be broken down into its components of planned margins, experience profit and other components. The experience profit was then required to be further analysed. This analysis of profit was substantially easier than questions covering this material in recent exams due to the timing of the cashflows.

Following the analysis of profit candidates were then asked to draft comments for the FCR based on their findings. Candidates then had to recommend a series of investigations they would ask an actuarial student to perform to further understand the expense experience.

The final part of the question stated that as a result of these investigations you believe the expense assumptions need to be strengthened and subsequently, there would be a \$15m reduction in the present value of the future profit margins.

This upset the Managing Director, who has made a number of points as to why he thinks this assumption change should be deferred. Candidates were asked to draft a response to the MD covering both the professional issues they face as well as the specific impact the assumption change will have on the accounts.

The overall results were as follows:

	Marks Required	% of total marks	Number of Candidates
Strong Pass	34	77.3%	4
Pass	28	63.6%	7
Slightly Below Standard	23	52.3%	7
Weak	11	25.0%	2
Serious Lack of Knowledge	0.1	0.2%	2
Did Not Attempt	0	0.0%	1
Maximum Mark	38.0		
Average Mark	25.9		
Standard Deviation	9.1		

The question was well answered as indicated by the proportion of candidates passing the question.



Part (a) presented no difficulties to the candidates with nearly every candidate achieving full marks.

In part (b) the main problem encountered by candidates was calculating the interest on excess assets. However, a number of candidates achieved full marks (average mark was 2.25 out of 3).

Part (c) consisted of three components. Most candidates had little difficulty calculating the investment and expense profit. The third component, mortality profit, presented more difficulties to the candidates with a number forgetting to include the release of reserves. What was more disappointing was that nearly every candidate forgot to check that his/her three components added up to the experience profit determined in part (b) (i.e. they did not attempt to calculate if there was any untraced component).

Candidates found parts (d) to (f) more difficult but still managed to score reasonably well. In part (e) a number of candidates failed to adequately explain the purpose of their investigation. Part (f) was quite challenging and while most candidates tried to address the professional issues involved they did so poorly. Few candidates covered both the current and future profit impacts correctly, with some failing to answer the entire question (suggesting they did not read the question properly).

Question 6 (15 Marks)

This question covered the impact of proposed changes to the financial reporting framework. Changes, similar to those proposed under IFRS, were proposed for another country, which previously had an identical reporting framework to that used in Australia. Candidates were then asked to assess the impact of the various changes.

Next, candidates were asked to provide advice on product changes that could be introduced and how these changes would reduce the impact of the changes on the reported operating profit.

The overall results were as follows:

	Marks Required	% of total marks	Number of Candidates
Strong Pass	18	60.0%	5
Pass	15	50.0%	4
Slightly Below Standard	13	43.3%	3
Weak	8	26.7%	7
Serious Lack of Knowledge	0.1	0.3%	3
Did Not Attempt	0	0.0%	1
Maximum Mark	19.0		
Average Mark	12.4		
Standard Deviation	5.2		

Overall, the question proved a good discriminator as indicated by the spread of students across each grade.



In part (a)(i) very few respondents noted the second change in asset rules, that assets other than unlisted subsidiaries should be held at current market value rather than market value net of realisation costs. Consequently, most respondents obtained only 1 of the 2 marks on offer.

Part (a)(ii) was generally well answered, most students recognising that DAC affects only the emergence of profits rather than total profits over the life of the policy and achieving full marks.

Part (a)(iii) was very poorly answered (averaging 2.5 out of 7), with no students recognising the 2nd or 3rd points in the solutions or achieving close to full marks. Many students seemed to be confused by the term "surrender value floor" and believed that this in some way changed the surrender value of the policy. Other students did not recognise that this type of policy is usually valued on an accumulation method or did not understand how the accumulation method would be applied.

Part (b) was perhaps the best discriminator in this question, with students achieving a wide range of marks. Students should however recognise that a 3-mark question usually requires 3 separate points to be made.

David Ticehurst
Chief Examiner – Life Insurance Course 2B, May 2005 Exams
20 June, 2005



CHIEF EXAMINERS' REPORT

Course 3A: General Insurance

Results Summary

69 candidates enrolled for the May 2005 exam. Of these, 1 did not present at the exam.

It is proposed that 19 candidates be awarded a pass.

The analysis by examination centre is as follows:

Location	Attended	Passed	Pass rate
Australia	58	18	31%
Overseas	10	1	10%
Total	68	19	28%

Examiners

Examiners for this year were:

Chief Examiner: Philip Chappell
Assistant Examiner: Kaise Stephan
Assistant Examiner: Craig Price

Degree of Difficulty and Course Coverage

The following tables show the distribution of questions and marks by level of difficulty and course coverage:

Degree of Difficulty

Question	Aims Addressed	Unit	Degree of Difficulty	Total Marks
1a	1	1	KU	5
1b	1	1	SJ	4
1c,d	1	1	CJ	8
2a	6	2	SJ	3
2b	5	2	CJ	4
2c	5	2	SJ	3
2d	6	2	KU	2
2e	6	2	CJ	4
3a	3	1	KU	3
3b,c	3	1	SJ	6
3d,e	3	1	CJ	8
4a	7	3	KU	3
4b,c	7	3	SJ	5
4d	8	3	CJ	6
4e	8	3	KU	2



5a	10	4	KU	3
5b	10	4	SJ	3
5c	8	3	SJ	3
5d	10	4	CJ	5
5e	9	4	SJ	3
6a	10	4	SJ	2
6b	8	3	KU	3
6c,d	9	4	SJ	8
6e	8	3	CJ	4
Total				100

Question By Question Analysis

Question 1 (17 marks)

Course coverage: Unit 1, Syllabus Aim 1
Mark allocation: Knowledge and Understanding – 5 marks
Straightforward Judgement – 4 marks
Complex Judgement – 8 marks

Question 1 dealt with the effects of the recent tort reforms on claims costs and the responses by insurers to reserving and pricing issues.

Overall this question was not particularly well handled. Most candidates took a systematic approach to part (a), and this part was the best handled, with an average mark of 3 out of 5. The first of the tort reforms, dealing with removing of legal barriers to persons assuming some of the liability for recreational activities they undertake, was misunderstood or misread by some candidates to mean that there would be more people able to claim.

Parts (b), (c) and (d) were not as well handled, with an average total of only 5 out of the 12 marks available. In part (d), the better candidates identified the specific issues of the database being collected by APRA, notably the lack of standard policy coverage, the long tail nature of the business, and the difficulty of making case estimates. Poorer candidates made more peripheral comments, e.g. on differences in insurers IT systems, or issues arising from large events or catastrophes.

The correlation between the markers was 95% for marks and 90% for grades.

Grades were distributed as follows:

Strong Pass (A) – 8 candidates
Pass (B) – 27 candidates
Slightly Below Standard (C) – 20 candidates
Weak (D) – 10 candidates
Showed Little Knowledge (E) – 3 candidates



Question 2 (16 marks)

Course coverage: Unit 2, Syllabus Aims 5 & 6
Mark allocation: Knowledge and Understanding – 2 marks
Straightforward Judgement – 6 marks
Complex Judgement – 8 marks

This question considered issues relating to single national workers' compensation schemes, and self-insurance issues. Despite being characterised as 50% 'complex judgement', this question was one of the easier questions to pass. This is borne out by the healthy pass rate of 52%. Candidates were generally able to say something reasonable in most of the parts, and hence the distinguishing factor was the quality of response.

Part (a) asked candidates to comment on the potential cost advantages of a national insurance scheme. Most responded appropriately to the issue of administrative savings (although this was pointed to in the question). The point about a national scheme potentially having a different level of benefits was rarely considered. The average mark for this part was 1.3 out of 3.

In part (b), when evaluating whether self-insurance is cheaper or not than paying premiums, many candidates noted that there was a saving on profit margins, but did not go on to balance this against the capital/reinsurance cost of retaining the risk. Better candidates were able to recognise the need to balance how efficiently the employer was able to cover both administration and capital costs compared with the external insurer. The premium cross subsidy consideration was rarely mentioned in this part. Parts (b) and (c) (non-financial considerations), though, were generally well answered, with an average of 4.2 out of the 7 marks on offer.

Part (d), asking candidates to comment on the solvency implications of the company withdrawing from its current scheme, was more of a stumbling block, with an average mark of 0.8 out of 2. Many did not clearly consider whether the current scheme was in deficit or not, and many missed how any current level of cross subsidisation issue could result in other employers having to pay more for the scheme now to get back to (or even just maintain) solvency.

Part (e) about the actuarial implications of the exiting employer, was not handled particularly well, although many candidates did comment on the need for different reserving parameters for the new exposure periods without the exiting company. The average mark for this part was 1.5 out of 4.

The correlation between markers was 87% for marks and 89% for grades.

Grades were distributed as follows:

Strong Pass (A) – 3 candidates
Pass (B) – 33 candidates
Slightly Below Standard (C) – 24 candidates
Weak (D) – 6 candidates
Showed Little Knowledge (E) – 2 candidates



Question 3 (17 marks)

Course coverage: Unit 1, Syllabus Aim 3
Mark allocation: Knowledge and understanding – 3 marks
Straightforward Judgement – 6 marks
Complex Judgement – 8 marks

Question 3 dealt with management accounts, a part of the course that is not examined very frequently. The question was poorly handled, suggesting that many candidates have little idea of the practical workings of a general insurance company. Many candidates mentioned possible manipulation of management results in part (e)!

Part (a) was generally well answered, although many candidates erroneously stated that the appropriate measure for travel insurance was number of policies rather than days of cover. The average mark in this part was 2 out of 3.

In part (b) most candidates were unfamiliar with working loss terminology, some assuming that it related to reinsurance. Where candidates made an attempt or understood the question most identified a reasonable method of calculation. However, few candidates identified why separating working losses from large losses is important. Most of the limits set were relatively low, and many were not justified. The average mark for this part was 0.5 out of 3.

Part (c) was generally answered poorly with very few students identifying that using reporting date would save calculating IBNR allowances for claims and WBNR for policies. Very few students picked up on the problems that arise in management reporting if WBNR/IBNR are not allowed for. When discussing disadvantages most students confused management reporting with data collection. The average mark for this part was 0.4 out of 3.

Parts (d) and (e) required candidates to make observations on management reporting issues (and not setting reserves or releasing profit, as a number of candidates mistakenly believed). The solutions allocated $\frac{1}{2}$ mark per point for up to 4 points in part (d) and 12 points in part (e). The markers noted that few candidates approached this level, and the examiners therefore revised the marking schedule to 1 mark each for up to 2 points in part (d) and 1.5 marks for two sensible comments for each of the four options listed in part (e). These parts of the top 20 papers were reassessed by the Chief Examiner on this basis.

Grades were distributed as follows:

Strong Pass (A) – 3 candidates
Pass (B) – 10 candidates
Slightly Below Standard (C) – 23 candidates
Weak (D) – 22 candidates
Showed Little Knowledge (E) – 9 candidates
Did not attempt (X) – 1 candidate



Question 4 (16 marks)

Course coverage: Unit 3, Syllabus Aims 7 & 8

Mark allocation: Knowledge and understanding – 5 marks

Straightforward Judgement – 5 marks

Complex Judgement – 6 marks

Question 4 was the outstanding claims question. This time the question focused on the Projected Case Estimates model, with data from a household portfolio with a large liability claim embedded in the data.

A number of candidates misunderstood part (a), simply stating what the calculated factors are in the PCE model, instead of noting points such as the requirement for stability in estimation and payment patterns. The average mark in this part was 1.7 out of 3.

Surprisingly, some candidates made errors in the methodology for calculating the factors in part (b), and some candidates made numerical errors. The average mark for this part was only 1.6 out of 3.

A number of candidates were unable to complete the proof in part (c), or were hazy on precisely how the infinite series was generated. However, most recognised that the result could be used in part (d). Many candidates did not realise that the large case estimate was due to a public liability claim, some not apparently understanding the nature of a householders portfolio, and some apparently having misread the question and assuming that it had said there had been no large claims (it said that there had been no large events).

Most candidates who recognised the data issue (even if not why) made a reasonable attempt to project out the estimates. Some recognised that the factors from quarter 6 onwards were essentially the same, and were able to derive an answer with minimal calculation. Others projected out to quarter 9 before applying the result from part (c). The average mark for this part of the question was 2.6 out of 6.

Part (e) was essentially bookwork, and the average mark was 1.6 out of 2.

The correlation between the markers was high – 94% for mark and 91% for grade.

However, the markers set the grade boundaries quite high, with a consequent low pass rate.

The examiners reviewed some the borderline papers at each grade and reduced the grade boundaries. This resulted in the number of candidates passing the question increasing from 15 to 24, and in a reduction in the number of Ds from 25 to 15.

Grades were distributed as follows:

Strong Pass (A) – 6 candidates

Pass (B) – 18 candidates

Slightly Below Standard (C) – 24 candidates

Weak (D) – 15 candidates

Showed Little Knowledge (E) – 5 candidates



Question 5 (17 marks)

Course coverage: Unit 3, Syllabus Aim 8
Unit 4, Syllabus Aims 9 & 10
Mark allocation: Knowledge and Understanding – 3 marks
Straightforward Judgement – 9 marks
Complex Judgement – 5 marks

This question covered premium liabilities. Parts (a) and (d) required numerical calculations, with justification of assumptions. The other parts required qualitative answers.

For what is an important area of general insurance practice, this question was poorly answered.

Part (a) required the calculation of unearned premium. The most common serious error for this section was calculating unearned premium as the difference between written and earned premium – whether for all quarters, the latest quarter only, or something intermediate. The monthly premium caused candidates considerable difficulty, with some assuming that it was all earned or simply ignoring it altogether.

Many candidates lost marks for not stating assumptions. Many of the issues that candidates faced would have been avoided by a careful reading of the question. The average mark for this part was 1.1 out of 3.

Part (b) required candidates to select one of three different methods for assessing the claims component of the premium liability. Several candidates missed the “given the data above” element of the question, and selected other methods, supported by an assumption they could get the data. Assumptions were not well addressed. Some candidates selected the wrong method in this part but went on to use a loss ratio method in part (d), or managed to apply a unit cost method without ever realising that it was effectively a loss ratio method. The average mark for this part was 1.2 out of 3.

Part (c) was even more poorly handled, with an average mark of 0.6 out of 3. Many candidates completely missed the point, often noting that the future was more uncertain than history, that we were using a loss ratio method versus PCE or other irrelevant points. However, many candidates did consider large claims/catastrophes, if not in this part, then in part (b).

Part (d) was the complex judgement part of this question, and required candidates to estimate the unearned premium liability. The markers noted that this may have caused confusion in some candidates and that the question may have been clearer if the word “unearned” had been removed. Most candidates managed to work out a loss ratio (although usually not with catastrophe loading), apply it to UEP and add something for expenses. Better students considered discounting or expenses in more detail. Some candidates, however, missed expenses or did not even get as far as applying a loss ratio. The average mark for this part was 1.6 out of 5.

Part (e) should have been easy marks for most candidates. Instead, for some it was an opportunity to demonstrate their lack of product knowledge. The most common error here was not understanding what “new for old” meant. It is primarily a claim size issue, but a number of candidates referred to this change as an extension of benefit period or exposure



period, and highlighted that there would therefore be more claims. This represents a fundamental lack of knowledge about a mainstream insurance product. The average mark on this part was 1.7 out of 3.

The correlation between markers was 97% for marks and 95% for grades.

Grades were distributed as follows:

Strong Pass (A) – 3 candidates
Pass (B) – 16 candidates
Slightly Below Standard (C) – 17 candidates
Weak (D) – 14 candidates
Showed Little Knowledge (E) – 18 candidates

Question 6 (17 marks)

Course coverage: Unit 3, Syllabus Aim 8
Unit 4, Syllabus Aims 9 & 10
Mark allocation: Knowledge and Understanding – 3 marks
Straightforward Judgement – 10 marks
Complex Judgement – 4 marks

Question 6 asked candidates to discuss the correlation issues between insurance classes for outstanding claims and premium liabilities, and then to consider the actuarial implications of a new claim settlement tax being introduced.

The first 3 parts of the question involved qualitative answers with lists of factors, and ended up being relatively easy for most students to get reasonable marks (the average total mark was 5.6 out of the 10 marks available).

The last two parts were a good discriminator between candidates. Part (d) required some relatively sophisticated thinking about the relationship between independent and systemic risk and correlations between groups of risks. Part (e) required thinking about how central estimates, premium liabilities and diversification factors would change with the possible introduction of a new tax.

Very few candidates returned reasonable responses to the statistical components of parts (d) and (e). The key points were that as portfolio sizes grow, they become more correlated with each other due to a relatively higher systemic risk component. While in retrospect this fact is obvious, it is perhaps a line of thought that would be difficult for many to deduce from first principles.

Given this, the feature that tended to distinguish passes from failures in this question was the key actuarial skill of whether they were able to show knowledge in part (e) in the way to respond to the proposed tax from a central estimate and risk margin point of view.

The markers' assessments correlated well (96% for marks, 92% for grades).

With an overall pass rate of 30%, the grades for this question were poorer than expected.



Grades were distributed as follows:

Strong Pass (A) – 4 candidates

Pass (B) – 17 candidates

Slightly Below Standard (C) – 20 candidates

Weak (D) – 17 candidates

Showed Little Knowledge (E) – 10 candidates

Philip Chappell

Chief Examiner – General Insurance Subject A, May 2005

June 2005



CHIEF EXAMINERS' REPORT

Course 3B: General Insurance

Results Summary

18 candidates enrolled for the May 2005 exam, and all presented at the exam.

It is proposed that 9 candidates be awarded a pass.

The analysis by examination centre is as follows:

Location	Attended	Passed	Pass rate
Australia	13	7	54%
Overseas	5	2	40%
Total	18	9	50%

Examiners

Examiners for this exam were:

Chief Examiner: Philip Chappell
Assistant Examiner: Kaise Stephan
Assistant Examiner: Craig Price

Degree of Difficulty and Course Coverage

The following tables show the distribution of questions and marks by level of difficulty and course coverage:

Degree of Difficulty

Question	Aims Addressed	Unit	Degree of Difficulty	Total Marks
1a	11	1	CJ	6
1b	12	1	CJ	3
1c	13	1	SJ	6
2a	11	1	KU	4
2b	12	1	SJ	4
2c	17	3	SJ	4
2d,e	13	1	CJ	6
3a	15	2	KU	3
3b	15	2	CJ	6
3c	12	1	CJ	4
3d	13	1	SJ	4
4a	16	2	SJ	3
4b,c	16	2	KU	11
4d	16	2	CJ	4
5a	17	3	SJ	3



5b,c,d	18	3	SJ	9
5e	18	3	CJ	4
6a	19	4	KU	2
6b,c	19	4	SJ	7
6d,e	19	4	CJ	7
Total				100

Question By Question Analysis

Question 1 (15 marks)

Course coverage: Unit 1, Syllabus Aims 11,12 & 13

Mark allocation: Straightforward Judgement – 6 marks

Complex Judgement – 9 marks

Question 1 was a fairly probing question that dealt with motor rating and in particular the use of excesses.

Part (a) asked candidates to comment on the results of a one-way analysis of some motor policy data through two different distributions. A number of candidates picked up the key issue (the unexpected increase in frequency and cost with increasing excess), but missed a number of the other points and were not always specific about what extra data would be required. The overall average mark was 2.6 out of 6.

In part (b) candidates were asked whether insurers should charge a lower premium for different excesses. Some candidates suggested giving discounts for higher excesses. However, no one drew the distinction between voluntary and compulsory excesses. The average mark was 0.9 out of 3.

Part (c) was a straightforward calculation of a premium rate with a requirement to state assumptions. Most candidates made a reasonable job of this. The average mark was 3.6 out of 6, with candidates losing marks because of failure to include all of the required factors in the calculation.

Marker 1 (more experienced) was more generous than marker 2, and the correlation between actual marks was only 81%. However, the correlation between grades was 94%. The examiners revised marks required for B, C and D downwards after reviewing some of the papers. The candidates who passed performed satisfactorily in parts (a) and (c), while C candidates performed poorly in one of (a) and (c) and D candidates performed poorly in both parts.

Grades were distributed as follows:

Strong Pass (A) – 1 candidate

Pass (B) – 8 candidates

Slightly Below Standard (C) – 6 candidates

Weak (D) – 3 candidates



Question 2 (18 marks)

Course coverage: Units 1 & 3, Syllabus Aims 11,12,13 & 17
Mark allocation: Knowledge and Understanding – 4 marks
Straightforward Judgement – 8 marks
Complex Judgement – 6 marks

Question 2 dealt with pricing a contract to write comprehensive and Compulsory Third Party insurance for a large government fleet. The question involved some complexity, as the contract gave the right to sell the CTP insurance to the new owner when the vehicle was finally deregistered and auctioned.

Part (a) asked candidates what data they would ask for. This part was fairly straightforward and candidates scored an average of 2.6 out of 4.

Part (b) required more judgement as candidates were asked what factors they would take into account in deciding whether to tender for the contract. This was not handled as well, with many candidates not really understanding the key issues of profitability and potential cross subsidisation between the CTP and comprehensive business. The average mark was 2.3 out of 4.

Part (c) required candidates to state how they would estimate the overall profitability of the contract. This part was trying to assess whether candidates could work through the logic of the calculations, and whether they would recognise the importance of the CTP cover in the subsequent private ownership to the overall profitability. Most candidates had a general idea about how to calculate the profitability, but many were not specific and few understood the detailed issue of the CTP cover with private ownership. The average mark for this part was 2 out of 4.

Parts (d) and (e), not specifically related to the rest of the question, assessed whether candidates could think through the issue of CTP costs for four wheel drives. Few candidates gave answers that matched the level of detail required, and the average combined mark for these parts was 2.1 out of 6.

As in Question 1, marker 1 was somewhat more generous than marker 2. The correlation between marks was 91%, and the correlation between grades was 92%. Candidates who passed this question made reasonable attempts at parts (a) to (c) and scored at least some marks for parts (d) and (e).

Grades were distributed as follows:

Strong Pass (A) – 1 candidate

Pass (B) – 7 candidates

Slightly Below Standard (C) – 7 candidates

Weak (D) – 3 candidates

Questions 3 (17 marks)

Course coverage:	Units 1 & 2, Syllabus Aims 12, 13 & 15
Mark allocation:	Knowledge and understanding – 3 marks
	Straightforward Judgement – 4 marks
	Complex Judgement – 10 marks

Question 3 dealt with investments, a part of the course that is not examined very frequently. Because of the focus on investments, and the collegiate input into the question, the examiners failed to notice that the question confused lenders mortgage insurance and loan repayment insurance (this problem also escaped the scrutineers and all of the candidates).

The error had most impact on part (a), where the solutions (written with lenders mortgage insurance in mind) required 3 factors to be given – unemployment, interest rates and house prices. Technically, given the actual business written (loan repayment insurance) only the first 2 of these points are valid. One marker awarded only 2 marks for this part of the question.

In order not to disadvantage candidates, the examiners awarded an additional mark where the third point was made, or where instead candidates mentioned general economic conditions. Some candidates split the question into factors affecting claim size and claim frequency, which is a sensible approach and for which some credit was given.

Part (d) had an average mark of 2.1 out of 4, and was better handled than parts (b) and (c) which had an average total mark of 3.5 out of 10.

The markers both considered that asking about benchmarks might have exceeded the breadth of the syllabus. The examiners are satisfied that the investment knowledge required was reasonable.

The correlation between markers marks and grades was approximately 90%. As noted above, there were subsequent examiners adjustments to the marks, and the examiners also slightly reduced the D/E and C/D boundaries after reviewing some of the borderline answers.

Final grades were distributed as follows:

Pass (B) – 7 candidates

Slightly Below Standard (C) – 5 candidates

Weak (D) – 6 candidates



Question 4 (18 marks)

Course coverage: Unit 2, Syllabus Aim 16
Mark allocation: Knowledge and understanding – 11 marks
Straightforward Judgement – 3 marks
Complex Judgement – 4 marks

This question dealt with reinsurance, and assessed whether candidates understood the practical operation of reinsurance contracts. Overall the question was quite well answered.

Parts (a) and (d) required written answers, and were not as well handled as the numerical parts. The average marks were 1.8 out of 3 and 1.6 out of 4 respectively. Many candidates did not appreciate the issue of changes in risk profile in assessing a possible 2-year contract in part (d).

Some candidates scored full marks in parts (b), calculation of reinsurance premiums, and (c), calculation of reinsurance recoveries. The average marks were 5.9 out of 7 and 3 out of 4 respectively. However, it was noticeable that a number of candidates went about the premium calculations the long way (i.e. separately for each risk), instead of thinking about how the calculations could be done more efficiently.

The correlation between the two markers was 96% on marks and 93% on grades.

Grades were distributed as follows:

Strong Pass (A) – 1 candidate

Pass (B) – 8 candidates

Slightly Below Standard (C) – 7 candidates

Weak (D) – 1 candidate

Showed Little Knowledge (E) – 1 candidate

Question 5 (16 marks)

Course coverage: Unit 3, Syllabus Aims 17 & 18
Mark allocation: Straightforward Judgement – 12 marks
Complex Judgement – 4 marks

This question was a fairly standard appraisal value question.

Part (a) dealt with discount rate assumptions and was not particularly well handled, with an average mark of 1.4 out of 3. The better candidates scored well but some candidates received no credit at all.

The other parts of the question were also handled poorly; part (d) asked candidates what factors would be considered when estimating the embedded value of the current customer base. There were 3 relatively easy marks available here, but the average mark was only 1.2 out of 3.

Overall this question was poorly handled with an average total mark of less than 7 out 16. The correlation between markers was 99% for marks and 93% for grades. Grades were distributed as follows:



Strong Pass (A) – 1 candidate
Pass (B) – 6 candidates
Slightly Below Standard (C) – 8 candidates
Weak (D) – 3 candidates

Question 6 (16 marks)

Course coverage: Unit 4, Syllabus Aim 19
Mark allocation: Knowledge and Understanding – 2 marks
Straightforward Judgement – 7 marks
Complex Judgement – 7 marks

Question 6 covered professionalism, and in particular the role of the Approved Actuary. The question was generally handled poorly, with an average total mark of 6 out of 16.

Part (a) was bookwork and was the best answered.

Part (c) asked what issues the Approved Actuary would face when dealing with an acquired portfolio with which he/she was not familiar. This part was particularly poorly answered with an average mark of 1.1 out of 4.

Part (e), dealing with remuneration packages and independence of the Approved Actuary, was assessed as complex judgement by the examiners. This assessment was queried by the BoE Chief Examiner during the review process. The average mark in this part was 1.5 out of 4, confirming that what may seem simple to an actuary with many years of experience can be complex judgement for an actuarial student with limited experience.

Reflecting the generally poor effort in this question, the markers set the various grade boundaries reasonably low. The correlation between the markers was 98% for marks and 93% for grades.

Grades were distributed as follows:

Strong Pass (A) – 2 candidates
Pass (B) – 6 candidates
Slightly Below Standard (C) – 6 candidates
Weak (D) – 3 candidates
Showed Little Knowledge (E) – 1 candidate

The following tables show the total marks available for each question, the marks required for each grade, and the maximum mark obtained:

Philip Chappell
Chief Examiner – General Insurance Subject B, May 2005
June 2005



CHIEF EXAMINERS' REPORT

Course 4A: Superannuation & Planned Savings

Results Summary

20 candidates enrolled for the 2004 exam. Of these, 19 were present at the exam.

It is proposed that 8 candidates be awarded a pass, which implies a pass rate of 42%. This compares with a pass rate of 24% for the 2004 overall Superannuation and Planned Savings exam.

It should be noted that in 2004 the Superannuation and Planned Savings exam was comprised of two exam papers. Superannuation and Planned Savings 4A reflects the first of these papers.

In summary:

	Number of candidates
Originally enrolled	20
Absent from exam	1
Presented at exam	19
Passed	8
Failed	11

The analysis by examination centre is as follows:

Centre	Presented	Passed	Pass Rate
Australia	16	8	50%
Overseas	3	0	0%
Total	19	8	42%

Examiners

Examiners for this year were:

Chief Examiner: John Hancock
Assistant Examiner: Phillip Everett

Degree of Difficulty and Course Coverage

The degree of difficulty of questions on each paper and course coverage is summarised in the tables below:

Question	Syllabus Aims	Units	K&U	SJ	CJ	Total Marks
Q1(a)	1(a), 1(b), 6(b)	1 & 3	3	2		5
Q1(b)	1(a), 1(b), 6(d)	1 & 3		4	4	8
			3.0	6.0	4.0	13.0
Q2.(a)	1(a), 1(b), 2(a), 6(d)	1 & 3	2	1	-	3
Q2.(b)	1(a), 1(b), 2(a), 6(d)	1 & 3	3	-	-	3
Q2.(c)	1(a), 1(b), 2(a), 6(d)	1 & 3	3	-	-	3
			8.0	1.0	0.0	9.0
Q3.(a)	1(a), 1(b), 2(a), 3(d), 6(a)	1, 2 & 3	1	1	1	3
Q3.(b)	1(a), 1(b), 2(a), 3(d), 6(a)	1, 2 & 3	1	1	2	4
Q3.(c)	1(a), 1(b), 2(a), 3(d), 6(a)	1, 2 & 3	1	1	3	5
			3.0	3.0	6.0	12.0
Q4.(a)	6(a), 6(d)	3	0	2.5	3.5	6
Q4.(b)	1(a), 1(b), 6(a), 6(c), 6(d)	1	3	1.5	1.5	6
			3.0	4.0	5.0	12.0
Q5.(a)(i)	1(a), 1(b), 3(a), 3(b), 4	1 & 2	2	2		4
Q5.(a)(ii)	1(a), 1(b), 3(a), 3(b), 3(d)	1 & 2	2.5	2.5		5
Q5.(b)(i)	1(a), 1(b), 4, 5(d)	1, 2 & 3	0	5		5
Q5.(b)(ii)	1(a), 1(b), 5(d)	1 & 3		1		1
Q5.(b)(iii)	1(a), 1(b), 4, 5(d)	1, 2 & 3	0	5	4	9
			4.5	15.5	4.0	24.0
Q6(a)	3(a), 3(b), 3(d), 5(a), 6(b)	2 & 3	5	2		7
Q6(b)	3(d), 6(b)	2 & 3		3		3
Q6(c)	1(a), 1(b), 3(d), 3(e), 4, 5(a), 6(a), 6(b), 6(c), 6(d)	1, 2 & 3		6	10	16
Q6(d)	1(a), 1(b), 3(d), 3(e), 4, 5(a), 6(a), 6(b), 6(c), 6(d)	1, 2 & 3			4	4
			5.0	11.0	14.0	30.0
TOTAL			26.5	40.5	33.0	100.0

Question by Question Analysis

Question 1 (13 Marks)

This question was aimed at testing students' legislative knowledge as well as their understanding of and ability to explain the calculation of actuarial present values in a surcharge context.

In part (a), the question asked students to explain how assumptions for calculating surcharge factors are set – essentially a bookwork question. Most students answered this satisfactorily, although some referred to outdated legislation.

Part (b) posed a scenario where some members of a defined benefit fund had queried the calculation of surcharge factors and the students had to draft a note to the Trustee responding to their queries. Most students managed to demonstrate some understanding and obtain marks across the range of possible solutions. Several students appeared confused about the difference between payment of contributions in a defined benefit plan



and crediting amounts to members' accounts and incorrectly tried to relate the issue to funding.

Eight students (42%) passed the question and a further eight (42%) scored a C.

Question 2 (9 Marks)

This question tested students' legislative knowledge regarding actuaries' statutory obligations and their judgement on action they would take in three different scenarios.

Part (a) related to the discovery of the occurrence of an unreported notifiable event – many students missed that this was a legislative breach that needed to be reported to APRA, although most correctly identified the further action that should be taken.

Part (b) related to a breach of preservation rules – most students noted that this was a legislative breach but didn't identify that because it was not discovered in the course of actuarial work there was no obligation to report it.

Part (c) related to a fund in an unsatisfactory financial position – this was well answered by most students.

Given this was almost entirely a KU question, a pass rate of 26% is very low.

Question 3 (12 Marks)

This was a relatively straightforward question testing students' knowledge of funding methods and judgement in choosing an appropriate method under various scenarios.

Most students (68%) passed this question, although only 3 students managed to score well and receive an A.

Most students demonstrated an understanding of the various funding methods and were able to identify an appropriate one for each scenario.

However, the CJ parts of this question (mainly (b)(ii) and (c)(ii)) were generally poorly answered.

Part (b)(ii) asked students about a fund with a large surplus. About half the students failed to identify that the employer may wish to go on a contribution holiday to use up the surplus.

Part (c)(ii) asked students to suggest alternatives to running a defined benefit fund. A number of students did not recognise that the employer wanted alternatives to a defined benefit fund, and simply suggested replicating the benefits in a master trust or industry fund. The issues of limiting investment options, giving the employer greater funding flexibility and the tax implications of meeting a guarantee outside the fund barely rated a mention in students' answers.

Question 4 (12 Marks)

This question was also on funding methods, but required more SJ and CJ.

Part (a) required students to respond to a client's comment that "traditional actuarial funding methods are irrelevant and a waste of time given APRA's focus on vested benefits"

Part (b) required students to explain to the client the difference between two funding methods.

Overall, this question was answered reasonably well, particularly part (b). Only seven (37%) students passed the question, while ten (53%) scored a C. The students with a C generally did well in one part of the question but not the other.

Question 5 (24 Marks)

This question was predominately a financial planning question, based on a scenario of a superannuation fund member nearing retirement and requiring advice.

Part (a) asked students to identify legislative breaches that occurred in the scenario.

Part (b) asked students to set out questions (with reasons) to ask the member to assist in formulating advice. Many students failed to give reasons or gave incorrect reasons.

Parts (c) to (e) required students to calculate projected retirement benefits and tested their ability to make appropriate assumptions and project future benefits and their knowledge of/ability to apply taxation rules.

They were generally satisfactorily answered, but a lot of students missed out on easy marks by not stating assumptions. A common error was to tax the whole excessive component at 48.5% rather than split into pre and post 83 components.

Eight students passed this question and only one student scored a C, with ten scoring a D or an E.

Question 6 (30 Marks)

This question provided students with details in relation to a small defined benefit superannuation plan and required them to carry out the key parts of an actuarial valuation.

Part (a) asked the students to set out the steps in conducting a valuation and to carry out some basic data checks, identifying errors in the data. This was an easy question that only the weaker candidates failed to do well.

Part (b) required students to calculate accumulation account balances for members. Only half the students understood the approach needed to answer this question. Some did not understand how the discount factor on the retirement benefit worked and others assumed that assets should be equal to vested benefits (despite the question providing total assets and vested benefits) and apportioned the excess among the members.

Part (c) asked students to calculate funding indices and individual company contribution rates for the members of the plan. Most students were able to calculate funding indices,



although some included accumulation liabilities without commenting on this. Calculating the individual company contribution rates was generally answered poorly.

Part (d) asked students to comment on a request from the employer to go on a contribution holiday. Many candidates appeared to be running out of time when they got to this part of the paper and hence answers were generally brief or not well thought through. The better candidates recognised the need to fund longer-term accrued benefits and that a buffer of 10% over vested benefits was prudent.

Overall, 8 (42%) students passed this question and 5 (26%) scored a C.

John Hancock

Chief Examiner, Superannuation & Planned Savings 4A

June 2005



CHIEF EXAMINERS' REPORT

Course 4B: Superannuation & Planned Savings

Results Summary

5 candidates enrolled for the May 2005 exam. Of these, 5 were present at the exam. It is proposed that 4 candidates be awarded a pass, which implies a pass rate of 80%. This compares with a pass rate of 24% for the 2004 overall Superannuation and Planned Savings exam.

It should be noted that in 2004 the Superannuation and Planned Savings exam was comprised of two exam papers. Superannuation and Planned Savings 4B reflects the first of these papers.

In summary:

Number of candidates	
Originally enrolled	5
Absent from exam	0
Presented at exam	5
Passed	4
Failed	1

The analysis by examination centre is as follows:

Centre	Presented	Passed	Pass Rate
Overseas	1	0	0%
Australia	4	4	100%
Total	5	4	80%

Examiners

Examiners for this year were:

Chief Examiner: John Hancock

Assistant Examiner: Phillip Everett

Degree of Difficulty and Course Coverage

The degree of difficulty of questions on each paper and course coverage is summarised in the tables below:

Question	Syllabus Aims	Units	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
Q 1	11	3	2	12		14
Q 2	7,9,11	1,2,3	2	9	5	16
Q 3	7, 9	1,2	c) 3	a) 3 d) 3	b) 4 d)6	19
Q 4	7,9	1,2	a) 4	b) 2	c) 6 d) 4	16
Q 5	7,8,9	1,2	a)2 b) 2	a) 3 b) 2	c) 7	16
Q6	8,9,10	1,2	a)1 b)3 d)2	b) 3 c)6	d)4	19
TOTAL			21	43	36	100



Question by Question Analysis

Question 1 (14 Marks)

This question asked students to write an article for factory workers on salary sacrifice contributions.

This question was answered satisfactorily by most candidates. Most students got marks for writing in a style relevant to factory workers, for including a relevant disclaimer and for giving some examples of people who would benefit from salary sacrifice. However the major areas where students failed to gain marks were:

- Failing to correctly explain the difference between post-tax and salary sacrifice contributions.
- Poor numerical examples - most students failed to include benefits tax in the example and some students compared salary packages after tax rather than post-tax vs. salary sacrifice contributions
- Only one student mentioned that salary sacrifice contributions do not attract the government co-contribution.

Three students (60%) passed the question and the other two students (40%) scored a C.

Question 2 (16 Marks)

This question asked students to write a letter to superannuation fund member, responding to their concerns about a negative investment return.

All five (100%) students passed this question, with one achieving an A.

Everyone put it into a letter format of some sort, though only one put in a disclaimer at the end. Most identified that the returns were not necessarily comparable and that there was a risk/asset allocation difference between the investments.

Few noted:

- other differences, eg. smoothing
- that the bank return still had to be taxed but the super money was already taxed
- that impact of recent market conditions
- fee differentials; or
- that the member could select a cash option if not happy with the current option

Overall, most concentrated on justifying the return achieved by the member rather than explaining in more detail why the comparison he was making was not necessarily valid.

Question 3 (19 Marks)

This question was on death and disablement insurance within a superannuation fund.

There was one stand-out answer to this question (A), two passes (Bs) and two clear fails (D and E).

Part (a) required students to explain the problems with a particular sum insured formula. Most candidates identified 2 or 3 of the problems with the sum insured formula, although in some cases the explanation was insufficient.

Part (b) required students to suggest a new formula with reasons and identify any issues with the change. All but one recommended an appropriate new formula, although the explanation of how it overcame the problems of the existing formula was a bit light on detail. Only one candidate identified takeover terms as an issue with changing the formula.

Part (c) asked students about factors in determining an adequate level of cover for an individual and was generally well answered.

Part (d) asked students to identify problems choice of fund will bring to employees with respect to their insurance arrangements. It was poorly answered. Only one candidate received more than half marks. Most candidates identified the automatic acceptance limit and retention of cover issues, but did not discuss possible solutions in sufficient detail. Only one student successfully identified the potential lack of cover for new employees as a problem.

Question 4 (16 Marks)

This question was on a superannuation fund that is looking to expand its investment offering in a Choice of Fund environment.

Three (60%) students passed this question, one achieved a C and one a D.

Part (a) required students to outline the pros and cons of a diversified manager versus sector specialist managers. This was answered well.

Part (b) required students to recommend an investment structure, with reasons.

Part (c) posed some alternative investment options and asked students to comment on their suitability and suggest alternative options.

In part (d) students had to give their view on how many investment options is a suitable number.

Overall, this question was answered well, particularly parts (a) and (d). Parts (b) and (c) were the differentiator questions, with the students who passed these questions passing the overall question.



Question 5 (16 Marks)

This question was a financial planning question, based on a scenario of a superannuation fund member being made redundant and requiring advice.

Two (40%) students passed this question, with the other three (60%) students scoring Ds.

Part (a) asked students to respond to “do I have enough to retire now”.

Part (b) asked students to respond to “I want a regular income with tax advantages. What options do I have” This was well answered by all students.

Part (c) asked students to respond to “If I rollover all my payouts to an allocated pension, do I pay any tax on rollover? How much of my \$550,000 will end up in the allocated pension?” This was well answered by three students and poorly by two. Some students included the Medicare levy in contributions tax.

Overall, this was a relatively easy question, so a pass rate of 40% is low.

Question 6 (19 Marks)

This question was based on a scenario of a company with its own medium sized superannuation fund (with both a defined benefit section closed to new members and an accumulation section) reviewing its superannuation arrangements. The company had three particular concerns – remaining competitive in a Choice of Fund environment, the impact of fluctuating defined benefit contribution on company profits and increasing administration fees.

Only one (20%) student passed this question. The other students scored 2 Cs and 2 Ds.

Part (a) asked whether or not the Trustee would be considered a wholesale client under FSRA. Most knew the fund would be classified as wholesale but no candidate was able to quote the relevant section of the FSRA. Two (out of five) knew the assets threshold and the logic behind the drafting of that clause.

Part (b) asked students to outline the pros and cons of retaining the current structure versus outsourcing to a master trust, addressing the three company concerns. Very few candidates linked their discussion of pros and cons to the three areas of concern. Most just set out the usual master trust versus stand-alone arguments and therefore marks awarded were quite low.

Part (c) asked students to suggest changes that could be made to address the three concerns if the current structure was retained. Suggested changes to address issue 1 were reasonable well answered but suggestions for issues 2 and 3 were very poor.

Part (d) asked students to describe the two ways members’ benefits could be transferred to a master trust and to recommend one of them. Most candidates recognised and could describe reasonably well the Successor Fund method of transferring members but very few were able to describe the member consent approach or give relevant reasons for their recommendation.

Overall this question was quite difficult and consequently answered very poorly. The question required some application of the details given in the question rather than a textbook answer.

John Hancock
Chief Examiner, Superannuation & Planned Savings 4B
June 2005



CHIEF EXAMINERS' REPORTS

Course 5A: Investment Management and Finance

Results Summary

21 Candidates enrolled for the 2005 semester one Investment Management and Finance 5A exam. Of these, 1 did not present at the exam.

It is proposed that 7 Candidates be awarded a pass, which implies a pass rate of 35%. This compares with a pass rate of 29% for the 2004 Investment Management exam in 2004. Please note that the Investment Management subject in 2004 was comprised of two examination papers of which the second examination paper has been used as a comparable exam to the Investment Management 5A exam for transition purposes in 2005.

In summary

	Number of candidates
Originally enrolled	21
Absent from exam	1
Presented at exam	20
Passed	7
Failed	13

The analysis by examination centre is as follows:

Centre	Presented	Passed	Pass Rate
Australia	14	5	36%
Overseas	6	2	33%
Total	20	7	35%

Examiners

Examiners for this year were:

Chief Examiner: Stephen Jackman

Assistant Examiner: Not filled



Degree of Difficulty for Examination and Course Coverage

The degree of difficulty of questions in the examination paper and course coverage is summarised in the table below:

Question	Units	Syllabus Topic	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
1a	1	1	2	2	0	4
1b	1	1	2	1	1	4
1c	1, 3	1, 3	1	3	2	6
1d	1	3	1	2	3	6
2a	2	3	1	2	0	3
2b	2	3	0	0	3	3
2c	2	2	2	1	2	5
2d	2	3	2	3	2	7
3a	3	2	2	1	1	4
3b	3	2	0	2	3	5
3c	3	2	3	3	2	8
3d	3	2	1	0	2	3
4a	4		1	2	0	3
4b	4		0	3	2	5
4c	4		2	2	2	6
4d	4		0	3	3	6
4e	4		1	1	1	3
5a	5	1	2	1	0	3
5b	5	2	2	2	0	4
5c	5	2	1	2	4	7
5d	5	2, 4	1	0	2	3
5e	5	2, 5	1	0	1	2
TOTAL			28	36	36	100

Question by Question Analysis of the Examination

Question 1

Question	Units	Syllabus Topic	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
1a	1	1	2	2	0	4
1b	1	1	2	1	1	4
1c	1, 3	1, 3	1	3	2	6
1d	1	3	1	2	3	6

This question was based on balance sheet analysis for two companies that were merging. The students had to calculate certain ratios and comment on them. The question was well handled with a 65% pass mark.

Part a) on profitability ratios was well answered. Most students calculated these ratios plus a few more and gave sensible comments on what they meant. Part b) on capital ratios was also quite well answered. Most knew the gearing or debt/equity ratio but quite a few missed the current ratio and few questioned the large intangible asset on GGL's balance sheet. Part c) on the merged company financials saw mixed responses. Most students correctly calculated the increase in debt required to finance the acquisition and the interest



cost. Many calculated the goodwill incorrectly based on the current share price rather than the NTA per share. Few commented on the need for an equity issue for the merged entity. Part d) on the Modigliani Miller theorem was generally well answered, but skipped by some students and some clearly didn't allocate much time to it. Marks were also given for commenting on the different borrowing and transaction costs.

Question 2

Question	Units	Syllabus Topic	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
2a	2	3	1	2	0	3
2b	2	3	0	0	3	3
2c	2	2	2	1	2	5
2d	2	3	2	3	2	7

This question was based on corporate lending and credit risks. Students had to discuss the 'put option' granted to lending customers (basically the option of the borrower to repay the loan early). The question then asked students about the pricing of interest rate and credit risks. The pass rate was 55%.

Parts a) and b) on the banking put option analogy were poorly answered and the question could have given more guidance. Many students missed the point in a) which flowed through to b). Marks in a) were also given for comments around the prepayment risk and term mismatch against at call deposits.

Marks in b) were also given for commenting on the loan to value ratio, the loan term and the likely security growth and volatility relative to interest rates.

Part c) on interest rate risks was poorly answered. Most students focussed on the yield curve and outlook, but few picked up on the desired structure of the balance sheet, the effect of competitive forces and the impact on pricing. Marks were also given for suggestions for sensitivity or stochastic modelling. Part d) on "rating agencies" v "internal credit assessments" was generally well answered

Question 3

Question	Units	Syllabus Topic	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
3a	3	2	2	1	1	4
3b	3	2	0	2	3	5
3c	3	2	3	3	2	8
3d	3	2	1	0	2	3

Question 3 asked students about the valuation of an oil lease using discounted cashflow analysis. Students were asked about the advantages of DCF as a valuation technique, the critical factors in assessing the cashflows, how to determine an appropriate discount rate, and then what the differences would be if the lease were for an exploration right rather than an already producing oil field. The pass rate for this question dropped to 35%, which I think reflected a more difficult question and my impression that the markers were less generous (me included).

Part (a) was reasonably well answered, with most students realising that a finite life asset favoured DCF but very few mentioned that there may be no current earnings (the students

would have appeared to have been ‘led’ by the background to the question despite the fact that this was actually a broader question – poor exam technique).

Part (b) was well answered, with most students listing a reasonable number of factors critical to the lease, although very few mentioned the embedded options.

Part (c) was less well answered. This allowed 8 marks for the derivation of a discount rate. Most students correctly regurgitated theory regarding the weighted cost of capital and the application of CAPM, but very few were able to relate this to the oil lease and talk sensibly about how the inputs like the beta and risk premium would be determined. Hence the average mark for this part was around 35% of the marks available and the maximum mark awarded was 4.5 out of 8.

Part (d) was reasonably well answered, but few students demonstrated a strong grasp of the concept of the embedded options and how this would be handled using DCF and scenario analysis.

Question 4

Question	Units	Syllabus Topic	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
4a	4		1	2	0	3
4b	4		0	3	2	5
4c	4		2	2	2	6
4d	4		0	3	3	6
4e	4		1	1	1	3

This question dealt with multi-factor models in portfolio management. The pass rate was again 35% as this question really tested whether the students understood these models and some of the mathematics behind them. The question had a high standard deviation in addition to low marks, so it became a key differentiator. The information came from a technical appendix in the readings, so it is possible that this was not as well covered, but the readings were clear that the course included the technical appendix.

Part a) asked for the advantages of a multifactor model. It was well answered with a lot of students getting the key point, but the other points to get the 3 marks were provided less often.

Part b) asked how you would derive a key input, the covariance matrices. The students did poorly here which I think reflected that they had not fully understood how this model worked (bearing in mind that this is a difficult question).

Part c) asked for understanding of the value, growth and situational styles of investment. Students on average got 50% of the marks, but given that the first two parts of this were essentially bookwork I would have expected the students to do better.

Part d) asked for how you would implement a ‘theme’ into a multi factor model, which essentially required the students to identify factors (industries) that complemented the theme and then suggest that additional factors for the theme might be sought. Very few students really got this, and this was evidenced by the fact that on average less than 20% of the marks available were earned. This answer was not directly referenced in the readings,



but it was an example of an application of the theory. With hindsight it was a very good question that was perhaps too difficult for exam conditions. However, with only a couple of exceptions whether the candidate passed or failed this question was an excellent predictor of the result on the whole exam.

Part e) asked how the changes could be implemented and this was reasonably well answered.

Question 5

Question	Units	Syllabus Topic	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
5a	5	1	2	1	0	3
5b	5	2	2	2	0	4
5c	5	2	1	2	4	7
5d	5	2, 4	1	0	2	3
5e	5	2, 5	1	0	1	2

This question dealt with tactical asset allocation and a possible ‘law’ for determining future returns based on historical returns. The pass rate was 40% and a lot of students struggled with the concepts. This was a question testing the application of concepts.

Part a) asked about the efficient market hypothesis which was a bit too easy and consequently most students got the marks.

Part b) asked about the conventional approach to asset allocation (namely forecasting asset class returns, variances and covariances and optimising). The understanding of this area was poor and on average 30% of the marks was achieved.

Part c) asked the students to describe how they would find out the details of the ‘law’. The question could have been worded better, but essentially it was just asking for a regression analysis over different times, between different variables and types of variables. It was poorly answered.

Part d) asked about implementation. Few students made the link to past returns and the fact that this would make the model dynamic. Quite a few students got confused between asset allocation models and models for stock selection.

Part e) was an easy question linking the results back to the EMH and was well answered.

Stephen Jackman
Chief Examiner, Investment Management and Finance 5A 2005
June 2005



CHIEF EXAMINERS' REPORT

Course 5B: Investment Management and Finance

Results Summary

11 Candidates enrolled for the 2005 semester one Investment Management and Finance 5B exam. Of these, 1 did not present at the exam.

For 2005, the Investment Management 5B exam replaces the previous Finance subject. The Finance subject in 2004 was comprised of two examination papers, where students had to pass each paper on a stand-alone basis.

It is proposed that 4 Candidates be awarded a pass, which implies a pass rate of 40%. This pass rate is consistent with prior years where pass rates were as follows:

- 2004 - 39%
- 2003 - 42%
- 2002 - 35%

In summary:

	Number of candidates
Originally enrolled	11
Absent from exam	1
Presented at exam	10
Passed	4
Failed	6

The analysis by examination centre is as follows:

Centre	Presented	Passed	Pass Rate
Australia	9	4	44%
United Kingdom	1	0	0%
Total	10	4	40%

Examiners

The examiners for this year were:

Chief Examiner: Ashutosh Bhalerao
Assistant Examiner: Razman Azmir/ Paul Carrett



Degree of Difficulty for Examination and Course Coverage

The degree of difficulty of questions in the examination paper and course coverage is summarised in the table below:

Question	Syllabus Aims	Knowledge & Understanding (KU)	Straight-forward Judgement (SJ)	Complex Judgement (CJ)	Total Marks
1a	8	2	0	0	2
1b	8	2	0	0	2
1c	8	0	4	0	4
1d	8	4	0	0	4
1e	8	0	0	6	6
2a	5 & 6	1	0	0	1
2b	5 & 6	0	5	0	5
2c	5 & 6	0	5	0	5
3a	8	0	11	0	11
3b	8	0	4	0	4
4a	1	3	0	0	3
4b	1	0	2	0	2
4c	1	0	0	4	4
4d	1	0	2	0	2
5a	2	4	0	0	4
5b	2	0	0	9	9
5c	2	0	3	0	3
6a	7	2	0	0	2
6b	7	0	5	0	5
6c	7	0	0	4	4
6d	7	3	0	0	3
7a	2 & 6	0	0	6	6
7b	2 & 6	1	0	0	1
7c	2 & 6	0	0	8	8
TOTAL		22	41	37	100

The paper was less weighted towards knowledge and understanding (KU) and more towards straightforward judgement (SJ) than last year. The split last year was 29% KU, 36% SJ and 35% CJ.

Question by Question Analysis of the Examination

Question 1

Question	Syllabus Aims	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
1a	8	2	0	0	2
1b	8	2	0	0	2
1c	8	0	4	0	4
1d	8	4	0	0	4
1e	8	0	0	6	6

This question was designed to test students' understanding of hedging using put options and synthetic hedging.



Overall, this question was poorly handled with an average raw mark of 37%.

The first 3 parts were straightforward bookwork type questions. However, many students failed to give sufficient detail in their answers.

Part d), which involved straightforward judgement to calculate the position in the portfolio to be synthetically hedged, produced a wide range of answers, with some achieving full marks and others scoring little or no marks.

Part e) proved too difficult was students, with no one making any real progress. This was surprising as although it was a little more complicated as it involved using futures for synthetic hedging, students should have been able to at least score a few marks.

Given the poor performance overall, this question was a weak discriminator.

Question 2

Question	Syllabus Aims	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
2a	5 & 6	1	0	0	1
2b	5 & 6	0	5	0	5
2c	5 & 6	0	5	0	5

This question was designed to test students understanding of a simple exotic option, which provides a fixed return if the share price increases beyond a certain level.

Overall this question was well handled, with an average raw mark of 63%.

In part a), most candidates identified the option as a cash or nothing European style call. Also, most students generally knew how to value this in part b), although some made careless mistakes, which is expected under exam conditions.

In part c), the option was changed to an American style option and students had to value this using the Binomial model. This provided the greatest variation of marks, with many students failing to recognise the American nature of the option.

This question was a good discriminator of student performance.

Question 3

Question	Syllabus Aims	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
3a	8	0	11	0	11
3b	8	0	4	0	4

This question was aimed at testing students' understanding of measuring value at risk, using historical simulation, Monte Carlo simulation and variance covariance matrices, applied to a scenario involving a hedge fund specialising in emerging markets.

Overall, this question was moderately handled, with an average raw mark of 61%.



Part a) involved writing a report on historical simulation versus Monte Carlo simulation. The identification of market risk was the most well answered part of this. The descriptions of Monte Carlo simulation and historical simulation were generally too vague and lacking the required detail. The advantages and disadvantages of the two methods were adequately identified by most students.

Part b) was handled poorly by most students and exposed a lack of understanding of variance-covariance matrices.

This question was a good discriminator of student performance.

Question 4

Question	Syllabus Aims	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
4a	1	3	0	0	3
4b	1	0	2	0	2
4c	1	0	0	4	4
4d	1	0	2	0	2

The aim of this question was to test students understanding of option trading strategies and applying this in light of certain expectations of the share price of a company.

This question was very poorly handled, with an average raw mark of 30%.

Part a) was basically bookwork and was generally well answered. Most candidates got marks for providing some of the possible trading strategies. Very few people got full marks as they did not manage to determine three trading strategies and describe them.

The performance on part b) was average. Some students realised that they had to remove the upside, but then failed to discuss how this was to be executed in practice.

Parts c) and d) were very poorly answered. With part c), only one student got close to the correct answer, with the remainder of students showing no knowledge and thus receiving a score of zero. This is surprising as part a) and b) lead the student along the path of thinking of trading strategies and two butterfly spreads is something that at least a few students should have been capable of determining.

With part d), only three students managed to put something even close to the correct payoff diagram. Some students even drew payoff diagrams upside down with effectively a negative payoff.

This question had good discriminatory power.

Question 5

Question	Syllabus Aims	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
5a	2	4	0	0	4
5b	2	0	0	9	9
5c	2	0	3	0	3

The aim of this question was to test students' understanding of the Binomial option pricing model and the ability to apply this to a scenario where a construction company looking for additional finance issues convertible bonds.

This question was poorly answered, with an average raw mark of 37%. Only one student scored more than 50%.

Part a) was basically bookwork and was generally well answered. Most candidates got marks for covering the basic features of the Binomial model, however, very few candidates explicitly mentioned the key assumptions of the Binomial model. A few candidates wrote too much on how to construct the Binomial tree, rather than discussing key points such as the use of arbitrage argument and the risk-free rate of return.

The performance on part (b) was very poor. It involved valuing a non standard convertible note using the Binomial model. Many candidates correctly constructed the stock price tree, with a few making minor errors. However, not one candidate could use the information to determine the option payoff profile. The common error was to blindly express the note as a combination of a vanilla bond plus a warrant, rather than answering the question asked. Only one candidate recognised the dilution aspect of the payoff, which arises if the notes are converted to equity.

Part c) was not well answered with many candidates presenting the weaknesses of the Binomial model rather than the specific limitations applied to the situation.

This question was a reasonable discriminator, with the widest range of answers arising for part b).

Question 6

Question	Syllabus Aims	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
6a	7	2	0	0	2
6b	7	0	5	0	5
6c	7	0	0	4	4
6d	7	3	0	0	3

This question was aimed at testing candidates' knowledge of two different models for interest rates and the valuation of interest rate swaptions using these models.

Overall, the answers to this question were generally very poor. The average raw mark was only 21%, with the top mark being only 50%.



Part a) involved describing the weaknesses and assumptions of Black's model. In general, most candidates managed to score at least some marks. However, several candidates stated that Black's model assumes that interest rates are "constant or deterministic", which is incorrect.

Part b) involved using Black's model to value the swaption. This was reasonably done, with a few candidates making some small careless errors.

Parts c) and d) were extremely poorly done. With part c), almost all candidates spent too long going into detail as to how to construct a trinomial tree, but did not apply this to describing how to value the swaption. No candidate was able to answer part d), which involved comparing the interest assumptions underlying Black's model versus the short rate trinomial tree based model.

Overall, this question was a reasonable discriminator of student performance. However, parts c) and d) were poor discriminators due to the generally poor performance of all candidates.

Question 7

Question	Syllabus Aims	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
7a	2 & 6	0	0	6	6
7b	2 & 6	1	0	0	1
7c	2 & 6	0	0	8	8

This was a relatively difficult question which was aimed at testing students' ability to apply Ito's Lemma to a non-standard process and their understanding of quantos.

Overall, the markers noted that students' responses to this question were quite polarised, with candidates performing either quite well or quite poorly. The average raw mark was 31%.

Part a) involved applying Ito's Lemma. Students either made no attempt or where an attempt was made, they generally performed quite well.

Nearly all candidates were able to identify the option in part b) as a quanto.

Part c) was a fairly complex question involving valuing a quanto given certain information. Where a reasonable attempt was made, the candidates performed well. The key errors were discounting the option value at the wrong risk free rate and incorrectly adjusting the volatility of the index and therefore deriving incorrect tree parameters.

The question was an extremely strong discriminator between candidates.

Ashutosh Bhalerao
Chief Examiner, Investment Management and Finance 5B 2005
June 2005

