INSTITUTE OF ACTUARIES OF AUSTRALIA

COURSE 2A LIFE INSURANCE **APRIL 2009 EXAMINATIONS**

Marking Guide

Level of difficulty.

Question	Syllabus Aims	Units	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
1(a)	3	1		4		4
1(b)(i)	2,3,7,13,14	1,2,4		3		3
1(b)(ii)	1,3,14	1,4		1	3	4
1(c)	2,3,5,9,10,11,12	1,2,3,4		6		6
1(d)	2,3,5,9,10,11,12	1,2,3,4			6	6
2(a)	1,2,5,7,8,9,10,12,13,14	1,2,3,4		2	2	4
2(b)	1,2,5,7,8,9,10,12,13,14	1,2,3,4		3	3	6
2(c)	1,2,5,7,8,9,10,12,13,14	1,2,3,4		5		5
2(d)	1,2,5,7,8,9,10,12,13,14	1,2,3,4			5	5
3(a)	1,3,4,6,7,10,13	1,2,3,4	5	5		10
3(b)	3,4,5,7,10	1,2	1		2	3
3(c)	2,3,4,7,10,15	1,2,3,5			5	5
4(a)(i)	1,3,5,8,9	1,2,3	6			6
4(a)(ii)	1,3,5,8,9	1,2,3		3	3	6
4(b)	2,5,6,7,8,9,10,11,13,15	1,2,3,4,5			3	3
4(c)	2,5,6,7,8,9,10,11,13,15	1,2,3,4,5		4	3	7
5(a)	1,6	1,2		4		4
5(b)	6,7,11	2,3	4			4
5(c)	7,10,11	2,3	4			4
5(d)	3,6,7,10,16	1,2,3,5		5		5
TOTAL			**20**	**45**	**35**	**100**

Answer all 5 questions.

QUESTION 1 (23 Marks)

You are the Product Actuary for ZYX Life Ltd ("ZYX"). The legislative and regulatory framework that ZYX is subject to is identical to that found in Australia, other than the calculation of tax on life insurance products.

For all life insurance companies, tax on any life insurance policy is calculated on an "Income minus claims minus expenses excluding commission" basis. That is, all claims and expenses other than commission are deductible when determining taxable income. Movements in policy liabilities are considered as an income/expense (whichever applies in any particular year).

The exclusion of commission as a tax-deductible expense was put in place to prevent companies from paying high commissions to agents, and then being able to reduce their tax burden accordingly. Despite this however, initial commissions have still remained relatively high, and trail / renewal commissions have remained anywhere in the region of 2% - 10% per annum, depending on the particular company.

The life insurance company tax rate is 30%.

The cashflows below give the new business projections for a typical long term life insurance product for ZYX (figures are in $000's):

	Policy Year 1	Policy Year 2
Premium	824	850
Commission	1,236	70
Non-commission Expenses	420	85
Claims	240	415
Investment Income	-63	22
Policy Liabilities at start of year	0	353
Policy Liabilities at end of year	353	326

(a) Calculate the tax payable for each of the first 2 policy years and hence the net profit after tax for each of those 2 years. For the sake of simplicity you may ignore the contribution of future commission to the level of policy liabilities and its associated tax treatment, i.e. just treat the full movement in policy liabilities as taxable income or a tax-deductible expense in each year. State any other assumptions you make. [4 Marks]

(b) Various lobby groups have now forced the tax authorities to consider changing the taxation basis to include commission as a tax-deductible expense. However it is also proposed to raise the life insurance company tax rate to 45%.

(i) Recalculate the tax payable for each of the first 2 policy years on the new taxation basis and also the net profit after tax for each of those 2 years. [3 Marks]

(ii) Discuss whether the combined effect of these tax changes is likely to be favourable to ZYX. State any assumptions you make. [4 Marks]

(c) The decision has been made that the only change to the tax system is to raise the life insurance company tax rate to 45%, i.e. commission expenses will not be tax deductible. Explain what actions ZYX could now take to effectively manage their life insurance business. [6 Marks]

(d) Discuss the advantages and disadvantages of each of your actions in (c) above. [6 Marks]

Question 1 Solutions

(a) Straightforward allocation of the given data gives the following:

	Year 1	Year 2
Taxable income = (Income – expenses liable for tax)	(824 - 63) - (420 + 240 + 353) = -252	(850 + 22) – (85 + 415 + (326 – 353)) = 399
Taxable Income	(P1+Y1) – (NC1+CL1 + [PL1-PL0]) = TY1	(P2+Y2) – (NC2+CL2 + [PL2-PL1]) = TY2
Tax at 30%	-75.6	119.7
Tax	T1 = TY1 x 0.3	T2 = TY2 x 0.3
Commission	1,236	70
Net profit after tax	-1,412.4	209.3
NPAT	TY1 – T1 – C1	TY2 – T2 – C2

This assumes that:

- The policy year is the same as the tax year;
- Negative tax is an addition to profit, i.e. tax credits can be used in the year of occurrence.

Where	Policy Year 1	Policy Year 2
Premium	P1	P2
Commission	C1	C2
Non-commission Expenses	NC1	NC2
Claims	CL1	CL2
Investment Income	Y1	Y2
Policy Liabilities at start of year	PL0	PL1
Policy Liabilities at end of year	PL1	PL2
Tax	T1	T2
Taxable Income	TY1	TY2
Net Profit After Tax	NPAT1	NPAT2

If it is assumed that the Policy Liability are negative amounts then the results become:

Taxable income	454	345
Tax at 30%	136.20	103.5
Net profit after tax	-918.20	171.50

The negative assumption should be stated in the answer.

Marking Guide:
1 mark each for the correct calculation of tax in each year to a maximum of 2 marks;
1 mark each for the correct calculation of net profit after tax in each year to a maximum of 2 marks;
0.5 marks for each assumption explicitly stated;

To a maximum of 4 marks SJ.

(b)

(i) Straightforward allocation of the given data gives the following:

	Year 1	Year 2
Income – expenses liable for tax	(824 - 63) - (420 + 240 + 353 + 1,236) = -1,488	(850 + 22) – (85 + 415 + (326 – 353) + 70) = 329
Tax at 45%	-669.6	148.05
Net profit after tax	-818.4	180.95

Using the below formula for taxable income and with tax rate change from 0.3 to 0.45

Taxable Income	(P1+Y1) – (NC1+CL1 + [PL1-PL0] + C1) = TY1	(P2+Y2) – (NC2+CL2 + [PL2-PL1] + C2) = TY2

If it is assumed that the Policy Liability are negative amounts then the results become:

Taxable income	-782	275
Tax at 45%	-351.90	123.75
Net profit after tax	-430.10	151.25

The negative assumption should be stated in the answer.

Marking Guide:
1 mark each for the correct calculation of tax in each year to a maximum of 2 marks;
0.5 marks each for the correct calculation of net profit after tax in each year to a maximum of 1 mark;

To a maximum of 3 marks SJ.

(ii) Discussion points

- The first year's net profit after tax is much more favourable to ZYX now, with a lighter first year capital strain of nearly \$600 (000) (or 500 if assumed negative PL);
- However the profit in policy year 2 is now smaller than before, by nearly \$30 (or 20 if assumed negative PL).
- As to whether this represents a more favourable outcome for ZYX overall depends on the experience beyond policy year 2, which in turn depends on the lapse / discontinuance experience. Whilst it is difficult to say without an actual full projection, a reasoned justification would be expected if the student does not indicate it is likely to be positive.
- Students may attempt to quantify this in some way. For example, for an assumed annual lapse rate and given that year 2 cashflows do accurately represent the best estimate cashflows (which is not quite right given the decrease in Policy liabilities over time), then the overall profit assuming a stable lapse plus discount rate would be very approximately:

Assumed Combined impact of Lapse & Discount Rate	(a) – Current Basis	(b) – Proposed Basis
5%	-1412 + 209.3/0.05 = 2774	-818.4 + 180.95/0.05 = 2800.6
10%	-1412 + 209.3/0.1 = 681	-818.4 + 180.95/0.1 = 991.1
15%	-1412 + 209.3/0.15 = -16.67	-818.4 + 180.95/0.15 = 387.93
20%	-1412 + 209.3/0.2 = -365.5	-818.4 + 180.95/0.2 = 86.35

(assuming life insurance continues in perpetuity)

- So with these assumptions the change looks favourable in terms of future profit.
- In addition, given the far smaller capital strain with the proposed changes, this is more favourable, particularly if capital is an issue.

Marking Guide:
1 mark for commenting on the changes to year 1 and year 2 net profit after tax;

To a maximum of 1 mark SJ;

1 mark for discussing that it is the lapse assumption or future experience that determines whether the change is favourable for overall profit;
1 mark for trying to quantify this in a reasonable manner;
1 mark for discussing this in terms of capital requirements and observing that the changes are much better in this regard.

To a maximum of 3 marks CJ.

To a maximum of 4 marks overall.

(c) Students are expected to be able to think of options when there is a significant extra cost imposed upon the business (a 50% increase in tax is significant by anyone's standards). Extra calculations are not required, as the point is simply that there is an additional and significant extra cost to deal with.

A range of actions could be considered:

- Consider setting up a salaried salesforce (if not already) - that is distribution is rewarded via salaries (a non-commission expense) rather than via commissions
- Keep premiums as they are but plan on lower profits from life business
- Raise premiums to compensate for the additional tax
- Market the premium rises as an 'up-sell' in terms of the quality of product by concurrently introducing new, low-cost features (e.g. additional funeral benefit payment of $2000 upon death)
- Make price rises highly selective in terms of the market segments receiving higher rises than others, rather than a uniform increase across the board
- Look for other ways to differentiate the service/product offered to the market, to mitigate effects on sales and retention of a price rise (for example, actively and professionally pursue a "service excellence" culture if not already done so – friendly and helpful staff makes a big difference for independent brokers and customers who have to deal with the company from time to time)
- Look for ways to cut non-commission expenses to mitigate any price rise or profit loss
- Maintain a commission-rewarded workforce but alter the levels of commission paid to mitigate any price rise or profit loss
- Review existing reinsurance arrangements with a view to cheaper rates either across the board or in key target markets, or to increase the initial reinsurance commission
- Look at other ways to provide benefits to the sales force that are not classified as commission.

Comments such as setting up a new company to sell life insurance for the purposes of tax avoidance would be considered a failure to understand the correct concept. The question states that the local legislative and regulatory framework is identical to that found in Australia, other than tax, which means no matter what way it is structured, tax at 45% is payable on a life product – one cannot "restructure out" of this liability. If this is mentioned it is serious cause for concern and markers should consider whether a D grade is warranted.

However some students may suggest that grandfathering provisions may make it a sensible option to set up a separate life company to preserve the former tax advantages in the older business – this is reasonable and can be given a mark.

Marking Guide:

1 mark for each point mentioned or for similar points (must be a reasonable and tangible action point);

To a maximum of 6 marks SJ.

(d) Advantages and Disadvantages of the various proposals in (c) include:

- Agency salesforce that is rewarded via salaries:
  - Advantages include:
    - the tax efficiency of non-commission expenses;
    - a host of other advantages that are traditionally attributed to agency workforces (e.g. loyalty, training, motivational, control aspects, etc compared to independent brokers)
  - Disadvantages include:
    - the cost of setting it up which would be significant;
    - the lack of a host of advantages that are traditionally attributed to commission-based remuneration (e.g. direct reward-for-results, perception of independence of advice for the consumer, access to a large range of independent/commission-based brokers, etc)
- Keep prices as they are but plan on lower profits from life business
  - Advantages include:
    - Market share retained (or increased) by adopting this approach;
    - Easy to do in the short term and gives the opportunity to wait and see what competitors do
  - Disadvantages include:
    - Possibility of loss-making policies;
    - Unlikely to satisfy shareholders who may take their money elsewhere
- Raise prices to compensate for the additional tax
  - Advantages include:
    - Depending on the actions of the rest of the market, this may increase or maintain market share (if others raise prices more),
    - ZYX can directly attribute premium increases to tax increases, i.e. ZYX is simply passing on the Government decision
  - Disadvantages include:
    - Depending on the actions of the rest of the market, this may reduce

market share (if others increase prices less)
- Regardless of market movements in terms of price, any sharp movement in premiums may give a short term hike in lapses as some policyholders would be prompted to reconsider whether they need life insurance for the new price offered
- Extra costs involved with this in terms of marketing, calculating and loading new rates on policy administration and new business systems, education of salesforce, etc

- Market the price rises as an 'up-sell':
  - Advantages include:
    - It may mitigate adverse lapses on existing policies as policyholders perceive they are getting more features than before, albeit at a higher price
    - Features may specifically target higher retention levels, e.g. look to return 5% of premiums after 10 years for the additional price rise of x% (where x includes the effect of the tax changes + the return of premium feature)
    - It may differentiate ZYX's product in the market further than before, making it have a 'point of difference' for sale
  - Disadvantages include:
    - Affordability will be an issue for some policyholders
    - May be seen as gimmicky by the policyholders and the market, and an inefficient use of funds by the market or shareholders
- Make price rises highly selective rather than uniform across the board:
  - Advantages include:
    - Results in better retention and sales levels in target markets (e.g. female non-smokers over 50), but worse in other less-desired areas
  - Disadvantages include:
    - Can only do this as far as it is reasonable to do (equity) and will involve more planning and expense than a uniform rise, and may require more explanation to justify (to sales staff, potential and existing policyholders, etc)
- Look for other ways to differentiate the service/product offered:
  - Advantages include:
    - Improved customer loyalty by actively and professionally pursuing a "service excellence" culture if not already done so – friendly and helpful staff makes a big difference for independent brokers and customers who have to deal with the company from time to time
  - Disadvantages include:
    - This will take time and effort and will not combat short term tax losses if the price rises are not adequate to compensate for the higher tax
- Look for ways to cut expenses to mitigate any price rise or profit loss:
  - Advantages include:
    - Will be successful if there are areas that can be cut and services still maintained (which may or may not be possible)
  - Disadvantages include:
    - Care must be taken with cutting essential areas below reasonable levels (such as underwriting and claims) for the sake of short term relief of costs, as short term savings can often generate higher costs

in the long term

- Alter the levels of commission paid:
    - Advantages include:
        - Lower levels of initial commission would save money
        - Lower levels of initial commission but higher levels of trail/renewal commission will encourage the business that is sold, to remain in-force for longer
    - Disadvantages include:
        - Possibly lower levels of sales
        - Premium rates may need to be changed or at least tested for profitability
- Review existing reinsurance arrangements:
    - Advantages include:
        - If new reinsurance arrangements are negotiated or entered into, price rises may be smaller than would be the case if existing reinsurance arrangements were maintained
        - If able to increase the initial reinsurance commission, more of the upfront expense may be shared
    - Disadvantages include:
        - Cost in terms of management attention and relationship with existing reinsurer
        - Reinsurers may want to review their rates anyway if they are affected by the change in tax basis

Marking Guide:

0.5 mark for each advantage or disadvantage discussed, to a maximum of 1.5 marks for any single option (main bullet point above);

To a maximum of 6 marks CJ.

QUESTION 2 (20 Marks)

You are the Product Actuary for Too Much Pressure Life Ltd ("TMP"), an Australian life insurance company. You report to the Head of Product and Pricing who is out of the office for a couple of days, so the new CEO has come straight to you for your advice. He wants to boost sales of the Trauma product and thinks that sales of this product are far lower than they should be, both for TMP and for the industry as a whole.

He has been reading up on obesity, and thinks that including obesity as a condition for Trauma would generate massive interest in the market. As the first company to offer Trauma cover for this condition in the market, sales could be spectacular.

He has found some research which forecasts obesity to rise from a prevalence rate of 25% of the population to 40% of the population within 5 years. As such he cannot see that a price rise of more than 15% on the existing product would be necessary.

He does realise however that simply listing "obesity" as a condition could be quite vague or imprecise, but nevertheless is keen to proceed with significant enhancements as soon as possible.

He wants your recommendation on the matter within 2 working days.

Draft a response to the CEO, outlining your thoughts about his proposal. You should cover:

(a) the appropriateness of including obesity as a trauma condition; [4 Marks]

(b) possible pricing approaches for a new condition such as obesity and the CEO's suggested price rise; [6 Marks]

(c) other matters you consider relevant; [5 Marks]

(d) any recommendations you wish to make. [5 Marks]

Question 2 Solutions

An appropriate response to the CEO may be by way of an email, memo or report. Given its expected in a couple of days it should not be overly formal or detailed. Also the response is seeking recommendations so these need to be present.

The question highlights that the company is Australian and that the Product Actuary is not the Appointed Actuary – students should point out the requirement for Appointed Actuary Advice under LPS 310 s20.

MEMO

To: CEO
Copy: Head of Product and Pricing; Appointed Actuary
From: Product Actuary
Re: Inclusion of obesity in trauma product

Dear CEO

With regards to the inclusion of obesity as a condition for the trauma product I would make the following points:

(a)

- Rationale of trauma product
  - The Trauma product is intended to cover the costs and financial impact following the diagnosis of a clinical or medical disease or illness. (SJ)
  - The impairment or illness is by necessity quite precisely defined, often with reference to certain medically defined levels of severity. (SJ)
  - Including obesity as a standalone trauma condition would be problematic
    - Its common measure is a BMI-index rather than a clinical diagnosis of a disease, disability or impairment. (SJ)
    - BMI is merely comparing someone's weight to height (squared) for the purpose of a broadly indicative risk factor rather than the onset or occurrence of something that is disabling or requiring immediate medical attention and cost. (SJ)
    - It can be self-induced, for example by gaining weight voluntarily, which is not a behaviour a policy should encourage for reasons of personal health and fidelity of the policy intent. (SJ)
    - Not all obesity is "environmentally" induced (whereby lifestyle and choices people make can cause them to become obese), and differentiating the different causes and levels of obesity may be difficult to justify or prove in an objective manner, at reasonable cost. (CJ)
    - For example, pregnancy would have to be excluded due to the associated weight gain; and also allowance or thought would have to be given to differences between ethnic or racial groups where significant differences between body structure and bone density can exist – this would make risk-rating and underwriting relatively difficult and complicated and raise questions in terms of human rights legislation. (CJ)

    - Depending on the measure (BMI or otherwise) adopted, many applicants would be declined cover because they already are obese or exhibit factors that suggest high likelihood of future obesity. (CJ)

  - As such obesity itself should not be included as a condition, but the impacts of obesity upon one's personal health are the key areas that a trauma product should cover
    - For example obesity is linked to higher rates of heart disease and cancer, two conditions already covered by the trauma product (CJ)
    - It is therefore a possibility to look closely at ways to enhance or promote what the trauma product offers an insured life, in the light of risks associated with obesity. (CJ)

Marking Guide:
1 mark for each reasonable point made and discussed;

To a maximum of 4 marks (2 marks SJ and 2 marks CJ).

(b)

- <u>Pricing of trauma product</u>
  - Pricing of any new condition would not be as straightforward as you have suggested. (SJ)
  - The current product has no allowance for the cost of an obesity benefit whilst population incidence is about 25% so the cost of adding the benefit would be quite substantial. (SJ)
  - Trauma covers many conditions contributing to the premium, so directly relating premium rates to projected population incidence rates for a single condition is not appropriate. (SJ)
  - Premium rates also need to account for other factors such as expenses, commission, persistency and so forth. (SJ)
  - When looking at incidence rates like the ones you have suggested, the expected increase in obesity is actually 60% (40% / 25% -1) rather than 15% so future price increases will also be substantial. (CJ)
  - The pricing process considers the current impact of each disease/illness that is currently or proposed to be covered together with estimating the overlap between each of these diseases/illnesses, and then estimates the expected future changes in that impact into the future. Adding obesity as a condition will require an analysis of how it interacts with all the other conditions covered. (CJ)
  - We would need to come up with an appropriate definition of obesity and this may differ from the commonly accepted definition used in society which may result in confusion and complaints (SJ).
  - We will need to revise the underwriting approach to account for the inclusion of this condition and to determine what are acceptable standard risks and when substandard loading should be applied or risks declined. (CJ)
  - We would have to carry out a detailed analysis of the current trauma claims and lapse experience and obtain input from underwriters, medical opinions, etc to enable the calculation of a price that accounts for increases in obesity-related conditions. (CJ)

  - We would also have to talk to our reinsurers for both their expertise and their support and agreement to any enhancements on the product (CJ)
  - The Appointed Actuary would have to provide advice as per required prudential standards (LPS310 s20 and s21 if reinsurance is altered) as the addition of a significant new benefit would constitute a change requiring advice. (SJ)

Marking Guide:
1 mark for each reasonable point made and discussed;

To a maximum of 6 marks (3 marks SJ and 3 marks CJ).

(c)

Points covered in the solutions for (a) and (b) above that students did not include in their (a) and (b) answers may be eligible for marks in (c) but marks should not be awarded in (c) if the point earned marks in (a) or (b).

- <u>Market need</u>
  - In order to make any improvements or renewed marketing of the product, it is advisable to thoroughly know the market first.
  - An estimate of the price increase should be market tested with intermediaries to see whether it is attractive to them. The new product may be too expensive.
  - Questions we should have reasonable answers for include, whether brokers and/or agents are asking for enhancements to the trauma product; what are their resulting estimates of increases in business volumes; and has the sales area in particular been asking for this based on their assessment of the market.
  - It is important to know this because there may be other ways we can enhance the sales levels of this product without incurring the expense of new pricing, reinsurance arrangements, IT changes and so on. This includes but is not limited to a change in marketing campaigns, a focus on improved service for the brokers/agents and policyholders, perhaps a repositioning of the existing trauma product in terms of pricing within the market, etc
- <u>Other points</u>
  - Need to consider the moral hazard / anti-selective behaviour that may happen if we offer this benefit and others don't (those who think they are more likely to claim on this benefit will pay the higher premium)
  - The underwriting process and standards will need to be updated in order to collect additional information, change non-medical limits, alter the personal statement to gather information relevant to the new risk(s), etc.
  - We would need to decide whether we want to sell two versions of the trauma product, the existing one and an enhanced one, as well as setting rules for holders of the current product to upgrade to any updated version.
  - Upgrading current trauma policyholders to a new product is likely to be problematic due to existing policyholders not having provided the additional information that we would now require for the new product (or the new condition may not be able to be passed on to existing policyholders so we may have to start a new series of the product if we guarantee upgrades).

  - It may be that we have to consider entering into a relationship with a new reinsurer if our existing one is unwilling to support an upgraded version or if its support is dependent on rates which may make the product uncompetitive (or reinsurance may not be available for this benefit).
  - If a new product is launched and is successful in terms of new sales, growth is only possible to the extent that our capital base supports it.

Marking Guide:
1 mark for each reasonable point made and discussed;

To a maximum of 5 marks SJ.

(d)

- Recommendations
  - We should get some clear direction from sales and marketing as to the nature of any enhancements being sought by the market – for example this could be through focus groups with key brokers/agents
  - We can investigate the experience of the trauma product as part of establishing the key assumptions in the event we proceed to enhance the product
  - The key underwriters and medical experts should be consulted as to the relationship between obesity and the trauma conditions currently covered, as well as investigating the impact of increased obesity levels, and the relationship of obesity upon any condition-specific enhancements that will be considered
  - We can consult our existing reinsurer as a starting point to establish their early thoughts, expertise and product ideas/support
  - Further discussions with the Appointed Actuary and Head of Product and Pricing on their return to the office
  - Establish the priority of this work in relation to other initiatives with the Head of Product and Pricing.

Kind regards,
Product Actuary

Marking Guide:
1 mark for each reasonable recommendation made;

To a maximum of 4 marks CJ;

1 mark for appropriate memo/formal format and language;

To a maximum of 1 mark CJ;

To a maximum of 20 marks overall.

QUESTION 3 (18 Marks)

No More Mistakes Ltd ("NMM") is an Australian life insurance company that has sold a considerable amount of unit-linked business over the past 10 years. However it has had a range of problems developing for some time, among them:

- **An exodus of key experienced staff over the last 24 months and difficulty in finding suitable replacements with relevant experience;**
- **There are a large number of different unit-linked products on sale and in force, supported by an even larger number of relatively outdated IT systems which are becoming expensive to maintain;**
- **A subsequent loss of knowledge within the company of the features of each existing product and associated IT system(s);**
- **A history of unintentionally underpaying customers who voluntarily surrender their policy, often by several thousands of dollars. This has resulted in high legal costs and associated reputational damage.**

A new CEO has been recently appointed but is new to the life insurance industry. He has turned to you for advice on various matters as you are an external consultant whom the CEO feels may give a more independent view.

(a) The new CEO is concerned about the number and types of risks facing the company, and how to start addressing them. He wants you to brief him on the types of risk that NMM faces or will face shortly, with a brief description of each, and for each risk one action he can consider taking in the short term to begin mitigating that risk. Prepare the key points you would raise with him about these matters. [10 Marks]

(b) The CEO indicates to you that the Board has suggested outsourcing the policy administration and unit pricing of all existing business to an external third-party provider, in order that his and their focus can be on growing the business. What would you say to him with regards to this suggestion? [3 Marks]

(c) Regardless of decisions to do with the existing business, the Board and CEO wish to simplify the sales and new business side of the company. They wish to launch a new product which will be the only NMM product for sale in the market, which will be managed off a single new administration/IT system.

They believe that with a new marketing campaign, sales can be strong and profits on this business can help offset any emerging losses or expenses associated with the existing business. They want to build in very high surrender charges in the first 10 years of the policy (the industry standard is moderate charges only on the first 3-5 years of the policy), so that policies which surrender early can help offset looming losses on existing business.

Provide your comments to the CEO on this proposal. [5 Marks]

Question 3 Solutions

(a) A student may answer this in various ways – for example they may take the main points to be made from the 2004 APRA Media Release which forms part of the course notes. Or they may adopt the model answer approach below.

It is likely there will be a large variety of 'suggested mitigations' – in assessing these, a mark should be awarded if it is sensible, specific and can be started in the short term (i.e. in the next month).

1. Risk	2. Description	3. Suggested Mitigation in the short term
Pricing errors in published unit prices	Due to time pressure, lack of knowledge, unreliable IT system, lack of checks and balances.	Appoint someone to look at historical errors and see what can be learned – was it the same error(s) repeating?
Lack of risk management culture/processes	Loss of corporate knowledge impacts the culture of risk management. Checks and independent reviews of processes, staff training programs, internal audits etc are likely to be weak.	Gather together all existing process maps for the business and assess what gaps there are. Assess the importance of each gap and prioritise the completion of each. Use independent experts as required.
Consistency of unit pricing with statements in policyholder documentation	Even if prices are 'correct', they may not be consistent with all correspondence that has occurred with each policyholder.	Carry out some spot checks for each broad grouping of policy. If errors are found, check other policies in that group. Form a list of policy groupings that appear to have highest rate of errors for further attention.
Lack of documentation of key decisions and judgements	Judgements are often made with regards to fulfilling obligations to treat policyholders equitably. With loss of staff, corporate memory of these decisions may be lost.	Gather together all such documentation. Assess what can be added from individual staff who may have been involved.
Operational risk	Loss of key staff and associated corporate memory /knowledge exacerbates the problems of complexity (in terms of products and IT systems).	Commission Human Resources to collate and report on the results of all exit interviews. Why have staff left? Can it be remedied with immediate and sincere management attention?
Reputation Risk	Paying out the wrong amounts tells a client that NMM Ltd is neither a safe nor professional company to invest with.	Appoint someone to look at historical errors and see what can be learned – was it the same error(s) repeating? Find out what agents/brokers think of the company.

Expense Risk	Expenses are growing and likely to continue doing so due to number and age of IT systems.	Need more info on the problem – carry out a stocktake of the number of systems currently in use, and how many policies/funds are administered on each, with a view to making decisions about which systems to focus on (whether rationalization of systems, outsourcing others, etc).
Regulatory risk	With pricing errors likely, there is a risk that the level of tax due has historically been in error also. This could be due to differences in data, assumptions or processes between various functions (e.g., pricing, publishing/advertising, reporting).	Obtain the latest FCR and audit reports and see what comments have been made previously.
Reserving risk	Risks with the consistency of data used for various functions as for regulatory risk, but particularly for the setting of reserves.	Obtain the latest FCR and audit reports and see what comments have been made previously.

Marking Guide:
1 mark for each reasonable risk stated and described (i.e. 0.5 marks for each entry in column 1 and 0.5 marks for each entry in column 2);

To a maximum of 5 marks KU;

1 mark for each sensible mitigation point (i.e. column 3);

To a maximum of 5 marks SJ;

To a maximum of 10 marks overall.

(b)
Cautions include:

- <u>All functions relating to the business, whether outsourced or not, are still the responsibility of NMM Ltd.</u>
- If the outsourcing is material then it needs to comply with LPS231.
- Outsourcing may provide some efficiencies at various times but there is a significant risk that there will be an even greater loss of corporate knowledge and memory as only a few staff within NMM will have to know the products and systems – this is a major risk. Then what options are there if the 3rd party provider itself gets into difficulty and cannot fulfil its obligations?
- Outsourcing itself may not be a cheaper option long term. The 3rd party will demand a premium for the fact they are taking on a complicated business.

- Unless the 3rd party has significant expertise and experience (e.g. have they hired a lot of staff from NMM's competitors, or even some of NMM's own staff?), what guarantees are there that they will manage it effectively?

Positives include:

- It is definitely possible that upon selection of a cost-effective and reliable 3rd party provider, some management attention may be freed up to focus on growth
- Staff morale and motivation (including the CEO) may be enhanced by a focus on positive things rather than being bogged down in historical issues
- A specialist organisation should be better at identifying and preventing errors and maintaining resources to prevent loss of knowledge / expertise.

Marking Guide:
1 mark for the first (underlined) caution above;

To a maximum of 1 mark KU;

0.5 marks for each subsequent point made under "cautions";

To a maximum of 1 mark CJ;

0.5 marks for each subsequent point made under "positives";

To a maximum of 1 mark CJ;

To a maximum of 3 marks overall.

(c)
Comments about the sales idea:

- Having a more simple proposition in terms of products and systems is generally a good idea, particularly in this situation where there are problems recruiting experienced staff.
- However, is having only one product on the market a proven or likely way to enhance sales? Does it provide enough tools/options in order for an agent or broker to sell NMM business? Typically sales agents refer to a range of products of varying complexities in order to target a sale of a particular brand/type/form.
- The new administration system will mean an additional cost to be accounted for, and further staff training. Are there the staff/resources to manage another system? Is it possible to utilize the 'best' existing system instead?
- Legacy issues cannot be swept away – the manner in which these issues are dealt with will have an impact on sales (either directly via public perception and reputation, or indirectly via staff morale and motivation).

Important Comments about the surrender value and offsetting losses:

- Surrender values should give due regard to equity and fairness for both the surrendering policy and those policies remaining in force.
- The proposed surrender basis outlined appears unsatisfactory in this regard.
- Surrender values must follow the APRA standard LPS4.02 and the proposed basis is unlikely to meet the requirements.

<u>Other points</u>

- The proposed surrender values are not consistent with the Industry and so would be a major hindrance to sales anyway, as people would not want to buy something with terms far less attractive than other products on the market.
- There may be reputational damage from very harsh surrender penalties compared with competitiors.
- If it is quite different to existing NMM products then staff training would have to focus on this so that mistakes that are costly to the company are not made – e.g. if staff are used to paying out higher relative values for surrenders on existing policies, accidentally paying out the same on the new product would not be consistent with how the product was priced.
- The overall issue of profits from one product offsetting another product(s) needs to be carefully considered. If excess profits from surrenders on the new product are used to offset losses on the old, this effectively means ‘cross-subsidisation’ of one product for another.
- Short of producing genuine new efficiencies this will mean lower returns than otherwise would be the case on the new product, which again could indicate to prospective policyholders that it is not an attractive product.
- This is not addressing the underlying cause of the costs.

Marking Guide:
0.5 marks for each reasonable comment about the sales idea itself;

To a maximum of 1 mark CJ;

1 mark for each ‘important’ comment about the SV basis and offsetting losses;

To a maximum of 2 marks CJ;

0.5 marks for each reasonable comment about the SV basis and offsetting losses under “other points”;

To a maximum of 2 marks CJ;

To a maximum of 5 marks overall.

QUESTION 4 **(22 Marks)**

As a consulting actuary to Get-A-Life Ltd, you are assisting the Appointed Actuary carry out the annual mortality investigation as part of the Financial Condition Report (FCR). Previous FCRs have indicated that mortality experience has been in line with pricing assumptions.

Get-A-Life Ltd sells a mix of individual life insurance policies. Its underwriting management standards were considered to be relatively relaxed up until about 3 years ago, at which time a new CEO was appointed. The incoming CEO quickly focused on improving the underwriting area, primarily through the immediate recruitment of a new Chief Underwriter as well as a number of other experienced underwriting staff.

You have the following data available (all sum insured figures are gross of reinsurance recoveries):

Policies in force for 3 years or less:

Age band	Average number of policies in force over last year	Number of actual deaths over last year	Average Sum Insured per policy in force over last year	Average Sum Insured of death claimant over last year
16-35	2,214	3	154,000	148,000
36-55	8,456	69	250,000	240,000
56+	1,751	40	125,000	245,000

Policies in force for greater than 3 years:

Age band	Average number of policies in force over last year	Number of actual deaths over last year	Average Sum Insured per policy in force over last year	Average Sum Insured of death claimant over last year
16-35	5,214	9	165,000	149,000
36-55	11,456	134	261,000	270,000
56+	3,654	106	126,000	301,000

Mortality Pricing Assumption:

Age band	Average Annual mortality rate
16-35	0.00124
36-54	0.00875
56+	0.02491

The mortality pricing assumption was established from industry experience that was based on claim numbers rather than Sum Insured. The mortality pricing assumption has not changed for several years but is considered in line with current industry levels. Selection effects in early years of a policy can be ignored for the purposes of this analysis, as can any incurred-but-not-reported (IBNR) claims.

(a)

(i) Calculate the actual to expected mortality ratios using claim numbers and claim amounts. [6 Marks]

(ii) Comment on your results, identifying what aspects of the mortality experience you would raise as being of concern. [6 Marks]

(b) Discuss any further information or analysis you would investigate regarding the mortality experience and history of underwriting standards. [3 Marks]

(c) You are now aware that there are significant amounts of yearly renewable term policies, comprising approximately equal proportions of annually stepped premiums and level term premiums. For the purposes of the FCR and assessing the profitability of the business, what other investigations besides mortality would you recommend be undertaken? In your answer briefly describe the investigation, what you would be looking for and why you think it should be undertaken. [7 Marks]

Question 4 Solutions

(a) Note to Markers:

There are 2 main Actual / Expected Ratios to consider, and both need to be considered for full marks. The first is in terms of claim numbers. As well as age-band and duration-based analysis (as below), students may aggregate results across age bands which is fine as well. Aggregating across the two duration-bases is ok, as long as no firm conclusions are drawn from it, as there is a clear difference in experience between the two duration bands.

The second is in terms of sum insured, which is potentially of more interest to a life insurer if there is credible data. In this case, given the more extreme results in terms of the age band 56+, aggregating across all age bands is not going to provide the insights required.

As the question tells students to analyse the data in terms of A/E ratios, methods other than this can be given some credit for reasonable conclusions but the maximum mark available is subsequently 6 out of 12 if A/E ratios are not considered.

(i) Analysis by numbers of claims:

Policies in force for 3 years or less:

Age band	Average number of policies in force	Expected number of deaths	Actual number of deaths	A/E
16-35	2,214	2,214 x 0.00124 = 2.75	3	109.1%
36-55	8,456	8,456 x 0.00875 = 73.99	69	93.3%
56+	1,751	1,751 x 0.02491 = 43.62	40	91.7%
Total		120.36	112	93.1%

Policies in force for greater than 3 years:

Age band	Average number of policies in force	Expected number of deaths	Actual number of deaths	A/E
16-35	5,214	5,214 x 0.00124 = 6.47	9	139.1%
36-55	11,456	11,456 x 0.00875 = 100.24	134	133.7%
56+	3,654	3,654 x 0.02491 = 91.02	106	116.5%
Total		197.73	249	125.9%

Analysis by Sum Insured:

Policies in force for 3 years or less:

Age band	Expected total sum insured to be paid out in claims	Actual total sum insured paid out in claims	A/E
16-35	2,214 x 154,000 x 0.00124 = 422,785	3 x 148,000 = 444,000	105.0%
36-55	8,456 x 250,000 x 0.00875 = 18,497,500	69 x 240,000 = 16,560,000	89.5%
56+	1,751 x 125,000 x 0.02491 = 5,452,176	40 x 245,000 = 9,800,000	179.7%
Total	24,372,462	26,804,000	110.0%

Policies in force for greater than 3 years:

Age band	Expected total sum insured to be paid out in claims	Actual total sum insured paid out in claims	A/E
16-35	5,214 x 165,000 x 0.00124 = 1,066,784	9 x 149000 = 1,341,000	<u>125.7%</u>
36-55	11,456 x 261,000 x 0.00875 = 26,162,640	134 x 270,000 = 36,180,000	<u>138.3%</u>
56+	3,654 x 126,000 x 0.02491 = 11,468,664	106 x 301,000 = 31,906,000	<u>278.2%</u>
Total	38,698,088	69,427,000	179.4%

Marking Guide:
0.5 marks for correctly establishing each underlined A/E ratio;

To a maximum of 6 marks KU;

(ii) <u>Analysis by numbers of claims:</u>

- For policies in force for 3 years or less, A/E ratios show that experience to date looks to be in line with pricing assumptions.
- For policies in force for greater than 3 years, A/E ratios demonstrate poor performance relative to pricing assumptions. This is particularly so for ages less than 56.

<u>Analysis by Sum Insured:</u>

- For policies in force for 3 years or less, A/E ratios show that experience to date looks to be in line with pricing assumptions for ages less than 56, but the ratio is significantly higher for ages 56+.
- This may or may not be due to a small number of very large claims on older lives, which could distort the overall figures given that there are only 40 claims in that age band.
- For policies in force for more than 3 years, A/E ratios again demonstrate poor performance relative to pricing assumptions over all age bands.
- Experience is particularly poor for ages 56+. Likewise for policies in force for 3 years or less, this may or may not be due to a small number of very large claims on older lives, but with 106 claims in this age band the high A/E ratios are probably caused by poor overall mortality experience.

<u>Overall concerns to be raised:</u>

- The experience of policies across all age bands in force for greater than 3 years is poor.
- For all policies in the age band 56+, the mortality results when weighted by sum insured are poorer still.
- This is of particular concern as we would expect an improvement in A/E ratios when weighting by Sum Insured to reflect stronger selection effects from underwriting.

Marking Guide:
0.5 marks for each bullet point comment under analysis by claim numbers;
0.5 marks for each bullet point comment under analysis by sum insured;

To a maximum of 3 marks SJ;

1 mark for each bullet point under overall concerns;

To a maximum of 3 marks CJ;

To a maximum of 6 marks overall.

(b) Further investigations would include:

- Mortality / pricing basis
  - A more detailed analysis by age for the 56+ group – is the poor experience in that band due to the average actual age exceeding the age indicated by the average mortality pricing assumption? Were the pricing projections accurate in terms of the profile of business expected in this age band?
  - An analysis of the actual claim size distribution – are a few very large claims distorting the experience? Have there been any claims arising from catastrophes?
  - More detailed analyses of experience by common risk factors such as age, sex, smoker status, source of business, etc.
- Underwriting changes
  - A more precise understanding of the 'before' and 'after' changes in underwriting standards, staff numbers/experience and guidance.
  - This may help in identifying what sort of trends/experience can be expected over the medium and long term from the older book of business.
  - Have there been any changes to underwriting requirements / non-medical limits.
- Cause of Claim Analysis
  - Has there been a pandemic or other significant cause of recent higher mortality in the affected age group (heat wave, flu epidemic, catastrophic event etc).
  - Has the proportion of early claims changed (indication of anti-selective behaviour).
  - Sickness versus accident – are there more accidents occurring or other trends identifiable?

Marking Guide:
1 mark for each point or investigation with reasonable discussion;

To a maximum of 3 marks CJ.

(c) Further investigations would include:

- Lapse experience (SJ)
  - What lapses are being experienced at all durations, and how does this compare to pricing. (SJ)
  - This is important for all YRT business because of the high ratio of initial expenses to premium – if lapses are higher than priced for, then Get-a-Life may not be recouping its initial expenses and profitability will be adversely impacted. (SJ)

  - This is exacerbated for stepped premium policies because their premium in the early years is much lower than that for level premium business. (SJ)
  - The lapse issue is also important for level premium YRT business as lower lapses than priced for in earlier years may be detrimental to overall profit – with premiums in later years less than the cost of mortality cover. (CJ)
  - This does depend on any surrender value basis as well, which should therefore also be considered / investigated. (CJ)
  - Overall we want to check that lapses are not too high for stepped premium business but not too low for level premium business. (CJ)
- Level of expenses and sales compared to pricing basis (SJ)
  - Unplanned increases in expenses present a major risk to Get-a-Life and as above can be exacerbated by higher than projected lapses. (SJ)
  - The level of sales / new business has a critical role here in terms of spreading out the underlying overhead expenses. If expenses are increasing, sales low and lapses high, this is an unprofitable mix. (CJ)
- Reserves (SJ)
  - Are reserves adequate particularly for the Level Term business where premiums in early years exceed the cost of mortality cover. (SJ)
  - Are reserves adequate across all life product types given the concerns in mortality raised in (a) above (CJ)
  - In relation to regulatory levels are the current reserves satisfactory (and compliant) (SJ)
- Investment policy and experience (SJ)
  - With significant reserves being held for Level premium business in particular, are returns on those reserves at reasonable levels and in line with pricing assumptions. (SJ)
  - Does the investment policy allow appropriate matching of assets with liabilities, allow appropriate choices to be made about long term growth, and also balance shorter term liquidity needs. (CJ)
- Reinsurance arrangements (SJ)
  - Given the mortality experience in (a) above, are the reinsurance arrangements appropriate. (SJ)
  - Particular attention needs to be paid to the arrangements in place for the older cohort (> 3 years duration) of business. (CJ)
  - And also for the high sums insured – e.g. is suitable cover in place to protect the larger claim amounts (e.g. excess of loss), versus solely quota share. (CJ)
  - Are recoveries being calculated correctly and being made in a timely manner. (SJ)
- Commission (SJ)
  - YRT typically has high up-front commission and lower trail / renewal commission. What are the historic, current and planned levels? (SJ)
  - The clawback arrangements of initial commission upon lapse in early years are critical – are they adequate and in line with other companies. (CJ)
  - Is the commission structure in line with the industry? Is it conducive to adequate persistency experience? (CJ)

Marking Guide:
0.5 mark for identifying / describing a suitable investigation;

0.5 mark for describing what looking for from that investigation;

To a maximum of 4 marks SJ;

0.5 marks for each point that explains the rationale for undertaking the investigation;

To a maximum of 3 marks CJ;

To a maximum of 7 marks overall.

QUESTION 5 **(17 Marks)**

You are the Appointed Actuary for a medium-sized Australian life insurance company. The company has a large book of traditional participating business, and a smaller book of annuities whose payments are linked to inflation.

The traditional business was offered with an option that provides a guaranteed minimum cash bonus rate of 0.5% per year. 90% of traditional policyholders took out this option and so have this ongoing annual guarantee in place.

Your company has been hit hard by the global financial crisis over the last 12 months. Equity returns and values have dropped dramatically, and in an effort to stimulate the flagging economy the central bank has dropped interest rates from 7% to 4%.

The company had a new Board recently appointed and as the Appointed Actuary, they have come to you with various questions.

(a) One Board member, Mr Gung Ho, has stated that he is not too concerned about the whole "crisis thing". The company has a relatively large (40-50%) exposure to bonds of all durations and as he notes, a decrease in interest rates means an increase in bond prices. He says that this should give a positive and significant return for these assets, for those that are sold in the coming 12 months. What are the main points you would raise in response? [4 Marks]

(b) Another Board member, Mrs Inter National, suggests that the risks the company faces can be mitigated by a variety of tools. She suggests that holding significantly more cash would alleviate some of the credit risks, and also investing in some overseas equities rather than just solely local equities would help diversify the investment exposure. Provide your comments on her suggestions. [4 Marks]

(c) Yet another Board member, Mr Con Servative, has concerns specific to inflation risks. He is concerned that Government interventions to stimulate the economy (such as via lower interest rates) may succeed 'too well', and give rise to significant levels of inflation. In what ways would increased inflation be a risk to the company? [4 Marks]

(d) The Board as a whole has directed the CEO to investigate options around the bonus rate on the participating traditional business as a way of managing the current situation. Historically the company has declared cash bonuses of 3-4% per annum. The Board and CEO believe that with the cut in interest rates, the expectations of any reasonable policyholder would be low and so the company should consider not paying a bonus at all. What would you say to the Board and CEO in terms of the main considerations of this matter, including any additional options open to them? [5 Marks]

Question 5 Solutions:

(a)

- The comment about bond prices rising as interest rates fall is correct. However:
  - The company will also need to purchase bonds on an ongoing basis (not least of which is for matching annuity payments). Therefore it will purchase bonds at higher prices (lower yields) also.
  - Bonds are only one component of the overall investment portfolio (the others likely being cash, equities and property). Lower or negative returns on these assets can more than offset any gains made via increases in bond prices.
- Equity returns and values have "dropped dramatically". For the given mix of business equities would usually make up 30-40% of the overall portfolio so overall the investment returns and current value of assets are likely to be lower than anticipated. This is exacerbated by the now lower returns on cash as well (which is likely to form 5-15% of the total assets).
- Given the bleak outlook for equity markets, government bonds may be in more demand now from a wider market than before. This combined with their higher price may make it more difficult to efficiently match the liabilities on annuity payments.
- As the yields drop, the value of the liabilities increases for annuities.
- Comments on differences between corporate bonds and government bonds and the impact of changing credit spreads and that therefore there may not have been changes in bond values are also valid.

Marking Guide:
1 mark for each main point made;
1 mark for an appropriate expansion or discussion of that point;

To a maximum of 4 marks SJ.

(b)

- Holding additional cash would result in lower credit risk compared to holding say corporate bonds, but:
  - Returns on cash are much lower than other assets in the long term and life insurance is a long-term business; and
  - as such it introduces other significant risks in the long term, such as enabling sufficient growth to meet long-term liabilities, as well as medium-term liabilities such as annuity payments in 3-6 years time.
  - Cash is not a good inflation hedge.
- If all equities currently held are in local companies, then it is correct that holding some international equities does in the normal course of events provide some benefit in terms of diversification;
  - However the financial crisis appears to well and truly be "global" in that all stock markets in the developed world are facing similar or greater losses and uncertainty, which may well outweigh any diversification benefits over the short to medium term;
  - It would also introduce the foreign exchange risk, which is an additional risk requiring management and attention;
  - There would be a range of additional costs in purchasing foreign equities,

such as selection of a new investment manager, or own research costs.

Marking Guide:
1 mark each for noting that each statement made by the Board member is correct, but that there is a range of other considerations to consider;
1 mark for each distinct and appropriate "other consideration" point made;

To a maximum of 4 marks KU.

(c) Higher Inflation can impact on the company in many ways:

- The erosion of 'real' returns from cash and bonds;
- Equity returns may be impeded due to the underlying company/investment also dealing with the costs of inflation;
- An increase in liabilities via higher future annuity payments;
- A combination of the above three points giving rise to significant asset / liability mismatches;
- In addition, there will potentially be increased demand for inflation linked annuities, compounding the effect and also potentially creating greater capital strain;
- Increases in internal expenses which have to subsequently be financed from higher premiums/charges, cost-cutting, acceptance of lower profit, or higher investment returns;
- Inflation impacts may not be uniform or consistent across the business, e.g. internal expenses may increase in line with a measure such as salary inflation, whereas annuity payments and other liabilities may increase in line with a general measure such as CPI, and these two measures may be quite different in any year.

Marking Guide:
1 mark for each main point made and given reasonable discussion;

To a maximum of 4 marks KU.

(d)

- The guarantee of 0.5% bonus for those who have elected this option must be honored as a minimum requirement by the company – this is non-negotiable
- Policyholder's reasonable expectations are going to be significantly impacted by what other similar products and companies in the market are doing, rather than just the general financial conditions or circumstances of the day
- Policyholder's reasonable expectations are also going to be significantly impacted by the history of bonuses paid to them, in this case 3-4% per annum. This does not mean we have to maintain that level but it does mean we have set expectations from our historical actions and decisions
- It should be investigated thoroughly as to what is actually affordable. Paying out historic levels of 3-4% may have meant that this was a slightly conservative payment with the thought that a prudent approach when returns were good would help offset poorer returns at a time like now
- If bonus rates are set too low, this may cause some disgruntled policyholders to surrender their policy, which may give a run on funds and subsequent liquidity

issues

- There would also be less business in force and possibly an impact on sales levels if the market perceives a low payment as a sign of excessive trouble, giving rise to higher unit expenses
- Rather than maintaining a cash bonus at the same level, something closer to the minimum could be made together with a terminal cash bonus guarantee – effectively guaranteeing a future bonus payment at the time of policy expiry. This may alleviate risks with policyholders becoming disgruntled.
- Alternatively an additional bonus could be paid upon death rather than cash, so the policyholder still sees extra value with their policy but the financial effect on the company is not immediate (other than an increase in reserves which would be less than an equivalent and immediate cash bonus).

Marking Guide:
1 mark for each main point made and given reasonable discussion;

Not mentioning that the guarantee has to be met would be a serious omission for this question. If not mentioned then the maximum marks available are 3 (rather than 5) for this section;

To a maximum of 5 marks SJ.

END OF PAPER

