



Institute
and Faculty
of Actuaries

EXAMINERS' REPORT

**SA3- General Insurance
Specialist Advanced**

September 2023

Introduction

The Examiners' Report is written by the Chief Examiner with the aim of helping candidates, both those who are sitting the examination for the first time and using past papers as a revision aid and also those who have previously failed the subject.

The Examiners are charged by Council with examining the published syllabus. The Examiners have access to the Core Reading, which is designed to interpret the syllabus, and will generally base questions around it but are not required to examine the content of Core Reading specifically or exclusively.

For numerical questions the Examiners' preferred approach to the solution is reproduced in this report; other valid approaches are given appropriate credit. For essay-style questions, particularly the open-ended questions in the later subjects, the report may contain more points than the Examiners will expect from a solution that scores full marks.

For some candidates, this may be their first attempt at answering an examination using open books and online. The Examiners expect all candidates to have a good level of knowledge and understanding of the topics and therefore candidates should not be overly dependent on open book materials. In our experience, candidates that spend too long researching answers in their materials will not be successful either because of time management issues or because they do not properly answer the questions.

Many candidates rely on past exam papers and examiner reports. Great caution must be exercised in doing so because each exam question is unique. As with all professional examinations, it is insufficient to repeat points of principle, formula or other text book works. The examinations are designed to test "higher order" thinking including candidates' ability to apply their knowledge to the facts presented in detail, synthesise and analyse their findings, and present conclusions or advice. Successful candidates concentrate on answering the questions asked rather than repeating their knowledge without application.

The report is written based on the legislative and regulatory context pertaining to the date that the examination was set. Candidates should take into account the possibility that circumstances may have changed if using these reports for revision.

Sarah Hutchinson
November 2023

A. General comments on the *aims of this subject and how it is marked*

The aim of the General Insurance Specialist Advanced subject is to instil in successful candidates the ability to apply knowledge of the general insurance environment and the principles of actuarial practice to providers of general insurance. Our expectation of a passing candidate at this stage is that they should demonstrate not only a grasp of the technical aspects of general insurance actuarial work, but also a good sense for products, the competitive marketplace, regulatory environments, and the operational aspects of an insurance company. They should be able to pull these areas of understanding together to provide well rounded advice to the users of their services.

We would offer candidates two key pieces of advice - (i) read the question properly and (ii) order your answer before committing to paper. We would stress that candidates do not need to make the majority of the points included in this report to achieve a pass mark (there are significantly more than 100 marks available for the points in this report). Therefore, time spent making sure that you are answering the question that is asked is more valuable than attempting to make as many points as possible, regardless of whether they are relevant.

The wording of the question has been carefully chosen. Therefore, it is essential to read the question properly. Various examples from this paper of recurrent failure to read a question are noted in the commentary for the questions. If something is not asked for then candidates will waste valuable time writing answers that will gain no marks. These broader answers may be a logical next step to the question and so may be appropriate for candidates to discuss in a professional context. However, this is an exam with a finite number of marks available and so the scope must necessarily be limited and specifically defined.

If a question does specifically mention something, candidates should also assume that there are marks available for this aspect of the question. During the exam setting process, any content that is superfluous will have been removed. A clear implication of that is that if there are numbers provided in the question paper then there are marks available for comment and consideration of those numbers.

Wording of question sections should also be considered in the context of the position within the overall question. Where new question information is provided between sections, candidates should recognise that this information is specifically relevant to the following section or sections. When answering preceding question sections, candidates should not consider any subsequent information in their answers (although it may cover similar ground).

On the second issue, candidates should note that SA3 is the key paper at which we test candidates' deeper thinking. Successful candidates will be able to display some capacity for independent and broad thinking, as well as to reward instances where these skills are displayed. When reviewing past papers, candidates should assume that the marks available for generic points are generally fewer than those awarded for the more challenging points that would be the mark of high-quality professional insight in a practising actuary. Marks available for list items from knowledge are lower still.

We strongly recommend that candidates step back and take the time to thoroughly think about what is actually asked in question situations proposed rather than simply considering numbers to be analysed with standard techniques. For example, candidates might stop to

think about what claims actually are for a particular class of business, considering factors such as what event causes the claim, who reports the claim, how it is dealt with once reported, what makes one claim small while another substantial, etc. This perspective will help candidates to consider items such as practical issues, stakeholders involved and their potentially diverging objectives, wider impacts, regulatory or ethical issues, inappropriateness of certain actuarial techniques for the specific situation, current economic or cyclical effects, etc. This is likely to lead to significantly broader point generation (and indeed reflects the thought processes of the examiners in drafting the questions and solutions) and a more rounded understanding of the underlying risks and dynamics which should also be of value to candidates when dealing with different stakeholders in their professional life. Some examples of this failure to think more widely on the current paper are noted in the commentary for the questions below.

More generally, we would also advise candidates to employ basic exam techniques such as well-structured answers and effective time management. The online delivery of the exams should assist candidates with providing well-structured answers. Bullet points within answers can help make answers clearer, and we would advise candidates to ensure that separate points are split into separate bullets and that they do not duplicate the same point across separate bullets. Candidates should also consider the command words used and tailor the depth of their answers accordingly.

Candidates who give well-reasoned points relevant to the specific question being asked, which are not in the marking schedule, are awarded marks for doing so.

B. Comments on candidate performance in this diet of the examination.

A number of specific comments are provided next to the questions where there were repeated reasons for candidates to score lower marks.

These include issues taking enough time to read the question properly and lack of consideration of secondary factors to assist with point generation and time management.

C. Pass Mark

The Pass Mark for this exam was 65.
425 presented themselves and 133 passed.

Solutions for Subject SA3 September 2023

Q1

(i)

Physical damage	[½]
Theft	[½]
Malfunction & breakdown	[½]
Public liability	[½]
Loss (during flight)	[½]
Invasion of privacy	[½]
Mid-flight collision	[½]
Allow marks for additional valid points	[½]

[Marks available 4½, maximum 2]

(ii)

Pilot:	
Age	[½]
Gender (if allowed)	[½]
Years of experience of flying drone	[½]
Past claims experience	[½]
Type of drone licence held	[½]
Home address	[½]

Drone:

Value	[½]
Type	[½]
Number of rotaries	[½]
Make and model	[½]
Remote range	[½]
Type of use	[½]
Number of drones	[½]
Number of payloads/packages	[½]
Flying hours	[½]

(Allow marks for additional valid points - ½ mark per point)

[Marks available 7½, maximum 4]

(iii)

Quota Share:	[½]
To be able to scale the amount of business quickly	[½]
Minimise financial impact if mispriced	[½]
Obtain some expertise for pricing and reserving for this product	[½]
Stop loss:	[½]
Limits downside risk from accumulation of small claims	[½]

Given the uncertainty around the performance might be suitable [½]
 Risk XoL: [½]
 To cover any single large loss, in particular liability [½]
(Allow marks for additional valid points - ½ mark for type of reinsurance, ½ mark for reason. Only award marks for a complete answer, i.e., type and reason - maximum 1 mark per reinsurance type)

[Marks available 3, maximum 2]

(iv)
 ORSA - Own Risk and Solvency Assessment [½]
 The entirety of the processes and procedures employed to identify, assess, monitor, manage and report the short and long term risks an insurance undertaking face or may face [1]
 And to determine the own funds necessary to ensure that the undertaking's overall solvency needs are met at all times. [1]

[Marks available 2½, maximum 2]

(v)
 Lack of data leading to:
 Incorrect pricing leading to anti-selection [½]
 If low, poor performance [½]
 High volumes leading to strain on operations [½]
 Low volumes not covering fixed expenses [½]
 Incorrect reserving leading to [½]
 Volatility in financial results [½]
 Incorrect recognition of profit [½]
 Increased uncertainty for capital modelling [½]

New product with no market standard wordings leading to:
 Gaps in cover [½]
 Incomplete exclusions [½]
 Unforeseen claim circumstances [½]

Large liability losses:
 And potential for latent claims [½]
 Especially given this is new type of risk / product. [½]

Regulatory uncertainty given new product:
 There could be restrictions put on the factors used in pricing. [½]
(Allow marks for additional valid points which are linked back to the question - ½ mark per point)

[Marks available 7, maximum 3]

(vi)
 Key performance metrics:
 Volume measure [½]
 Gross or net premium income [½]
 Count of policies [½]
 Size of the insured fleet [½]
 Profitability measure [½]

Claims loss ratio	[½]
Expense ratio, including the initial expense of launching new product	[½]
Gross to net loss ratios to inform the effectiveness of reinsurance	[½]
Capital requirements	[½]
Marginal regulatory capital increase as a result of adding product	[½]
Diversification benefit with low correlation with other products	[½]
Potential downside risk	[½]
Probable maximum loss from a single exposure / policy	[½]
Probable maximum loss from the entire book of business	[½]
Scenarios and sensitivities around the claims loss ratio	[½]
Strike rate	[½]

(Allow marks for additional valid points, ½ mark per point. - maximum 2 points for 1 KPI with examples)

[Marks available 8, maximum 4]

(vii)	
Time horizon	[½]
ORSA would usually cover 1 to 5 year projections	[½]
Time frequency	[½]
ORSA would usually detail the most recent upcoming year by quarter	[½]
Further years will be projected on annual basis	[½]
Risk measure	[½]
ORSA is generally concerned about downside risk and impact on capital	[½]
-VAR at 1-in-200 year return period	[½]
Economic environment	[½]
Various scenarios should be considered for next to 1 to 5 years	[½]
With various assumptions for interest rates and inflation.	[½]
Insurance cycle	[½]
This should consider if it is a hard or soft market with the impact that will have on	
Achievability of rates.	[½]
Future premium income	[½]
Initial policy volumes	[½]
Average premium per policy	[½]
Including any likely changes in the rates over the modelled time horizon	[½]
Retention rates after year 1	[½]
Future claims	[½]
Attritional claims loss ratio	[½]
Consideration of any large losses	[½]
frequency of drone accidents	[½]
Expenses	[½]
Initial expenses associated with launch of the new product	[½]
Fixed expenses - will these be covered or not, depending on the volumes written	[½]
Variable expenses - given the likely low premiums per policy, the variable expenses could be relatively high	[½]

Reinsurance	[½]
The uncertainty around the cost	[½]
And the availability	[½]
<i>(½ mark for each assumption and ½ mark per example, up to 2 marks per assumption)</i>	
[Marks available 29, maximum 5]	

(viii)	
The capital requirement for this product could be small	[½]
Given that this is a new product, with small volumes	[½]
The product is not exposed to CAT events	[½]
There should be small volatility of the claims	[½]
As likely to be high volume, attritional only claims	[½]
It should not be correlated with any existing products	[½]
Capital driven by insurance risk and not market/credit risk etc	[½]

The capital requirements could be high due to	[½]
Limited data available to assess the volatility of the product	[½]
Unknown historical performance	[½]
Uncertainty around the premium volumes	[½]
High exposure to unknown unknowns	[½]
Long-tailed claims, latent claims from the liability part of the cover	[½]

The capital required will be impacted by	[½]
Amount of reinsurance purchased	[½]
The relative size compared to the rest of the portfolio	[½]
<i>(Allow marks for additional valid points, ½ mark per point)</i>	
[Marks available 8, maximum 4]	

(ix)	
Examples of treating customers fairly include:	
Having a process to identify the needs of the customers for whom they are designing the policies.	[½]
Understand the financial capabilities of its customers and designing communications according to their ability to understand sometimes complex issues.	[½]
Providing clear, fair and not misleading advertising, marketing and disclosure materials as well as communications after the point of sale.	[½]
Ensuring that any advice given is suitable and takes account of the circumstances of the customer.	[½]
Ensuring that the policy performs in the way that the policyholder was led to expect and that the service standards are as they were led to expect.	[½]
Setting up reasonable procedures for submitting claims, changing products and making complaints.	[½]
Maintaining an appropriate balance between increasing sales and not exposing customers to inappropriate risks, particularly in the design and marketing of new products.	[½]
Measuring, monitoring, controlling and reviewing the risks arising from products for both existing and potential new customers. This would cover the effect of past changes in the economic or market environment and possible future changes, and	

stress testing possible risks to the firm from its retail business, taking into account product types, sales methods and after sales requirements. [½]
 Inclusion of cooling-off period in the policies so that customers who are encouraged to make an impulse purchase via advertising [½]
 Pricing fairness between the existing customers and new potential customers [½]
 (Allow marks for additional valid points, ½ mark per example)

[Marks available 5, maximum 3]

(x)
 In general, private individuals tend to be viewed as more vulnerable: [½]
 Companies should be more financially savvy. [½]
 Companies generally receive less protection from government. [½]
 generally, there is less regulatory scrutiny over insurance companies offering commercial insurance. [½]

Proposal excludes potentially large segment of business: [½]
 And thus, potential profits. [½]
 Commercial customers also need to be treated fairly. [½]
 (Allow marks for additional valid points, ½ mark per point)

[Marks available 3½, maximum 2]

[Total 31]

Candidates scored well in parts (i) to (iv) of this question, as expected given their relatively straightforward nature.

For the remaining parts of this question which were worth more marks, candidates were generally required to give more points in order to score full marks. Better prepared candidates were able to do this and score well in these later parts, by generating points such as by giving examples for parts (vii) and (ix).

Q2

(i)
 Motor insurance offers different types of cover: [½]
 Fire and theft [½]
 Accidental damage [½]
 Third party liability [½]
 Cover is usually provided on a loss occurring basis [½]
 In most countries this is a mandatory insurance, at least the third-party liability [½]
 Motor property claims are generally reported quickly: [½]
 and settled quickly. [½]
 Motor liability claims can take long time to settle: [½]
 and the settlement can include PPOs. [½]
 Typical measure of exposure is vehicle years. [½]
 (Allow marks for additional valid points, ½ mark per point)

[Marks available 5½, maximum 3]

(ii)

Frequency and severity of claims should be considered separately:	[½]
Safety features may contribute to lower frequency of claims	[½]
Introduction of electronics increases the severity of claims	[½]
The repair cost might be higher:	[½]
Require computers, special garage:	[½]
Any replacement parts will be more expensive	[½]
If the transition is slow, the overall average price will not be affected	[½]
The type of vehicle should already be a rating factor, so price should correctly reflect the risk	[½]
Consideration of differences in claims/losses between electric and self-driving cars	[½]
There are other factors than claim cost, that influence the price of the policy:	[½]
Market competition:	[½]
Sage in the insurance cycle.	[½]

(Allow marks for additional valid points, ½ mark per point)

[Marks available 6, maximum 3]

(iii) (a)

Pricing:

New vehicles with new features present an unknown in a pricing model	[½]
Make manual adjustments to the rating factors used.	[½]
Need to consider the frequency and severity of claims separately	[½]
There could be strategic considerations affecting the pricing	[½]
If a company wants to attract customers with these new cars, market price could be lower:	[½]
This could be done for an initial period to gather data to better assess the risk going forwards.	[½]

(b)

Reserving:

Any change in business mix will have an impact on the assumptions underlying typical reserving methods.	[½]
Change in mix will need to be considered either by:	[½]
Splitting the data into separate cohorts:	[½]
This might not be feasible at the beginning due to low volumes	[½]
Or by adjusting the assumptions like the speed of development or average cost.	[½]
Average cost in particular will be impacted due to the inclusion of batteries in the cars.	[½]

(c)

Capital:

The impact on capital will be driven by the speed of transition.	[½]
The detail and granularity of the capital model will influence how well this change can be reflected.	[½]
Initially there will be an increase in the underwriting / premium risk:	[½]
As most of the uncertainty will be attributed to the pricing of the new vehicles	[½]
Possible impact on other risk areas such as higher operational risk due to new product/risks	[½]

(Allow marks for additional valid points, ½ mark per point - maximum 2 marks for each section)

[Marks available 8, maximum 4]

- (iv)
- The materiality of the impact will depend on the current market position: [1]
- How many vehicles will be impacted: [1]
- What is the average vehicle age. [1]
- The wealth of the population will be an important factor: [1]
- Will everyone be able to afford to change old cars: [1]
- Or will the number of cars reduce as a result of these restrictions: [1]
- So the overall size of the motor insurance market might shrink. [1]
- Likely to lead to lower frequency of claims: [1]
- If fewer cars are on the road: [1]
- But might contribute to increase in theft of cars if more expensive on average. [1]
- Likely to lead to higher severity of claims: [1]
- As newer cars will have higher values: [1]
- The repair costs are likely to be higher: [1]
- However new safety features could lead to less severe injuries. [1]
- Consider impact on wider competition such as new entrants into the market [1]
- (Allow marks for additional valid points, 1 mark per point)*

[Marks available 15, maximum 6]

- (v)
- Warranty covers product defects and only in certain circumstances accidental damage [1]
- Warranty will not cover third party liability: [1]
- Unless caused by vehicle itself, with no involvement of the driver (e.g., self-driving) [1]
- Warranty tends to be multi-year, as opposed to one year motor policies [1]
- Warranty is usually provided for initial period after the sale, e.g., 10 years, and will unlikely be offered for older vehicles [1]
- Warranty would not provide cover against theft [1]
- Motor policy is typically mandatory, whereas warranty is optional. [1]
- (Allow marks for additional valid points, 1 mark per point)*

[Marks available 7, maximum 4]

- (vi)
- A private motor driver current logical needs are for: [½]
- Maintaining a current lifestyle, which can be fulfilled by: [½]
- Protection against theft of the vehicle: [½]
- Which would generally not be covered by warranty or: [½]
- Protection against accidental damage and breakdown: [½]
- Which would be covered by warranty. [½]
- Protection against third party liability: [½]
- Which typically would not be covered by warranty [½]
- A standard warranty product alone is unlikely to fulfil all the requirements of the driver. [½]
- With the announced changes to the market, warranty product may be viable to cover certain risks of a car owner: [½]
- Banning of cars older than 10 years means standard warranty period will cover full time when car is used on roads in this country. [½]
- (Allow marks for other reasonable points, ½ mark per point)*

[Marks available 5½. maximum 2]

(vii)

This will depend on the exact calculation of the lump sum vs annuity compensation: [1]

In theory if they are equivalent, there should be no difference due to change in inflation or interest rates. [1]

If the annuity is inflation adjusted, this might ensure that the value of the compensation is not eroded. [1]

However, claimants might need more money up front, in particular if the cost of living is increasing rapidly. [1]

Ultimately it will depend on the risk aversion of the claimant: [1]

and in particular the expectation of the future inflation might differ. [1]

(Allow marks other reasonable points, 1 mark per point)

[Marks available 6, maximum 3]

(viii)

This will depend on the relative increase between the inflation and interest rates [1/2]

The future payments will be adjusted to match inflation: [1/2]

To ensure that the compensation in real terms is maintained [1/2]

The discounting will be allowed at: [1/2]

Either at risk free rate, matching closely to the interest rates set by central bank: [1/2]

Or at the rate of return based on the investments: [1/2]

In both cases this is unlikely to match the inflation rate. [1/2]

Therefore, it is likely that the cost of future claims will likely increase. [1/2]

If the valuation is done correctly, there should be little impact coming from the change in choice between the lump sum payment and annuity. [1/2]

In reality, general insurers do not like having long tail liabilities, such as annuities: [1/2]

So, shift to more annuities might not be in line with company's business plan. [1/2]

Different types of inflation will impact the cost of claims for bodily injury: [1/2]

The wage-inflation will impact the size of the awarded compensation [1/2]

e.g., the expense inflation will impact the cost associated with the handling the claim [1/2]

(Allow marks for other reasonable points, 1/2 mark per point)

[Marks available 7, maximum 3]

[Total 28]

As the previous question, candidates scored better in the earlier parts of this question.

For parts (i) and (v) in particular, some candidates showed their good knowledge of insurance products and their nature, in order to score highly on these parts.

For part (iii) candidates can generate points by broadening out to think about how different areas of the business may be impacted.

For parts (vii) and (viii), some candidates failed to correctly consider the impact of rising inflation on both the lump sum/annuity decision in part (vii) and the cost of claims in part (viii), and hence failed to score highly.

Q3

(i)	
Purchase additional reinsurance on the existing book:	[½]
Stop loss or adverse development cover to cover downside risk	[½]
However this leaves the exposure to counterparty default risk	[½]
Will require to pay in excess of technical cost of such reinsurance	[½]
Cover may be expensive	[½]
Or not available	[½]
Novation:	[½]
This will transfer the policies to another (re)insurer	[½]
But this requires agreement from all three parties	[½]
And is negotiated on policy-by-policy basis	[½]
Therefore, depending on the number of affected policies, might be operationally	[½]
Difficult and expensive:	[½]
Given the emerging risks, unlikely to be able to find another (re)insurer willing to take on the risk:	[½]
Or the price associated with this transfer might be prohibitive.	[½]
Loss portfolio transfer:	[½]
Given the emerging risks, unlikely to be able to find another (re)insurer willing to take on the risk:	[½]
Or the price associated with this transfer might be prohibitive	[½]
Does not require the consent of policyholder:	[½]
This is operationally less cumbersome and cheaper than some other options:	[½]
But, depending on the jurisdiction, usually requires approval from a court.	[½]
Focus on claims underwriting/management:	[½]
With legal team proactively assessing the existing exposures:	[½]
And claims team preparing for new claims settling.	[½]
<i>(Allow marks for additional valid points, ½ mark per point - maximum 2 marks for one type of mitigation)</i>	

[Marks available 11½, maximum 4]

(ii)	
Change the wording of the policies:	[½]
To introduce specific exclusions or:	[½]
To change to claims made:	[½]
To introduce deductibles on certain perils covered (this might not be an option depending on the regulation).	[½]
Stop writing this line of business:	[½]
However, this might limit the volume of business from other lines of business:	[½]
Obtain reinsurance cover:	[½]
Quota share with high ceded percentage	[½]
However this leaves the exposure to counterparty default risk	[½]
Will require to pay in excess of technical cost of such reinsurance	[½]
<i>(Allow marks for additional valid points, ½ mark per point - maximum 2 marks for one type of mitigation)</i>	

[Marks available 5, maximum 4]

(iii)

Top down:	[½]
Looking at any market estimates and allocating it based on market share:	[½]
Bottom up:	[½]
Gather all the policy information:	[½]
Assess the likelihood of claims emerging:	[½]
There are likely to be multiple claims from one policy if insuring a large manufacturer	[½]
And their severity	[½]
Analysing similar types of claims in the claim's history:	[½]
Either own experience	[½]
Or market data / curves.	[½]
<i>(Allow marks for other reasonable points, ½ mark per point)</i>	
[Marks available 5, maximum 2]	

(iv)	
There might not be a need to book any additional reserves for this risk:	[½]
Depending on the stage of the emerging risk	[½]
And how much uncertainty there is around the claims arising.	[½]
ENID allowance could potentially be used:	[½]
However, the impact from this emerging risk should still be assessed:	[½]
And compared to currently held ENID allowance for this line of business:	[½]
ENID should be considered on the Claims Provisions for the historical exposures:	[½]
And on the Premium Provision for any future exposures.	[½]
Risk Margin cannot be “used” in this situation:	[½]
Under SII the purpose of risk margin is very specific:	[½]
To be the balance that another (re)insurer taking on the liabilities would require over and above the best estimate:	[½]
Thus, should not be viewed as a prudency margin:	[½]
And is not intended to cover emerging risks or volatility in the book of business.	[½]
<i>(Allow marks for other reasonable points, ½ mark per point)</i>	
[Marks available 6½, maximum 4]	
[Total 14]	

This was the shortest question on the exam, and generally answered well by candidates.

Better prepared candidates generally gave more than one approach for part (iii) and were able to generate a wide variety of scoring points on the final part of the question and hence score well overall.

Q4

(i)

An underwriting year grouping of claims will combine all the claims relating to loss events that can be attributed to all policies that commenced cover within a given year,

irrespective of when they are actually reported or paid and irrespective of the year in which the incident actually arose. [1]

An accident year grouping of claims means that all the claims relating to loss events that occurred in a 12-month period (usually a calendar year) are grouped together, irrespective of when they are actually reported or paid and irrespective of the year in which the period of cover commenced. [1]

A reporting year grouping of claims will combine all the claims that are reported within a given calendar year, irrespective of the date on which the relevant policy commenced, irrespective of when the claims are actually paid and irrespective of the year in which the incident actually arose. [1]

(Allow 1 mark per definition)

(ii)

Assume reinsurance policies are 12 month long and are on loss attaching basis. [½]

Follow the comment that half incepts 1st Jan and half 1st July: [½]

Thus $\frac{3}{4}$ of premium is earned in the same year as written. [½]

Assume claims are distributed evenly throughout the policy period: [½]

With the exception of the event, which all happened in 2022 accident year [½]

Assume that the excluding event losses in 2021 UWY have an average loss ratio of all other years. [½]

The result should look something like this:

Accident Year	Gross Earned Premium	Ultimate Claim Cost ex Event	Event Loss	GELR
2020	18,090	543		3%
2021	20,243	4,039		20%
2022	23,158	11,233	23,281	149%
2023	33,140	10,066		30%

(½ mark per assumption, maximum 2 marks for assumptions. 1 mark for premium calculation, 2 marks for claims calculation, 1 mark for loss ratio calculation. 1 mark for adjusting for the event loss)

[Marks available 7, maximum 6]

(iii)

Different basis will be affected differently: [½]

This is mostly dependent how quickly claims develop under each origin period basis. [½]

Under underwriting year basis claims take the longest to develop: [½]

Therefore, more historical years will be affected: [½]

Additionally, one origin cohort will have largest mix of different inflation effects. [½]

Accident year basis is quicker to develop than underwriting year: [½]

Fewer historical years will be affected: [½]

And it is easier to separate the inflation impact within each cohort: [½]

Does not have any URR, which limits the impact of inflation. [½]

Reporting year is the quickest to develop: [½]

Any inflation impact will be affecting only the most recent cohorts: [½]

This is the easiest to separate the inflation impact in the data: [½]

Does not have any URR or IBNR, which limits the impact of inflation. [½]
 (Allow marks for additional valid points, ½ mark per point)
 [Marks available 6½, maximum 3]

(iv) (a)
 Consumer price index:
 Contents cover - As this reflects best the cost of general goods [1]

(b)
 Wood and other construction materials index:
 Buildings class - As this will reflect the cost of materials used for fixing or rebuilding property [1]

(c)
 Average weekly wage index:
 Employer's liability - As big part of the cover is loss of earnings and this will reflect the general level of earnings [1]

(d)
 Lawyer fees and legal expenses index:
 Legal expenses cover - As this effectively covers the fees and expenses for any legal disputes [1]

(e)
 Court settlements index:
 Motor third party liability - As high value injury claims are usually settled in court [1]
 (Allow marks for other valid examples, 1 mark for each subpoint. Only award marks if a reason provided. Marks not awarded for just listing lines of business without valid reason)

(v)
 Assume that the claims are fully developed and that there is no tail needed, given this is contents insurance. [½]
 Calculate the incremental paid triangle: [1]

Underwriting year	Development year		
	1	2	3
2020	347	677	110
2021	563	1,090	
2022	806		

Calculate the ultimate closed claim count: [2]
 Assume claim numbers are fully developed after year 3. [½]

Cumulative Closed Claim Counts			
Underwriting year	Development year		
	1	2	3
2020	56	163	17180
2021	89	258	284.908

2022	125	362.93103	400.7827
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Calculate the incremental claim count triangle: [1]

Underwriting year	Development year		
	1	2	3
2020	56	107	17
2021	89	169	26.908
2022	125	237.93103	37.8517

Calculate average cost of claim [1]

Calculate the historic claim inflation based on average cost [1]

For base scenario assume historical claim inflation continues at the same level [½]

Calculate the average claim cost for future periods [1]

Calculate the resulting claims ultimate and claim reserves: [2]

	Paid in				
	2020	2021	2022	2023	2024
Amount	347	1,240	2,006	1742.42	254.01321
Count	56	196	311	264.839	37.851703
Avg Cost	6.196	6.327	6.450	6.579	6.711
Claims inflation historical		2.1%	2.0%	2.0%	2.0%
Reserves	1,996				

For alternative scenario assume use the inflation figures provided [½]

Calculate the average claim cost for future periods [1]

Calculate the resulting claims ultimate and claim reserves: [2]

	Paid in				
	2020	2021	2022	2023	2024
Amount	347	1,240	2,006	1964.49	322.88781
Count	56	196	311	264.839	37.851703
Avg Cost	6.196	6.327	6.450	7.418	8.530
Claims inflation new		2.1%	2.0%	15.0%	15.0%
Reserves	2,287				

Calculate the difference between the base and high inflation scenarios: [1]

1,996	Reserves on old inflation
2,287	Reserves on new inflation
291	Inflation impact

(Marks for other reasonable assumptions, maximum 2)

[Marks available 15, maximum 10]

[Total 27]

This question included a numerical question as part of it, with better prepared candidates having attempted a wide variety of numerical questions in advance of the exam, and hence would be expected to score better on these parts.

Candidates generally scored well on part (iv) of this question, with many candidates demonstrating an understanding of different lines of business for which the indices could be used as indicators of claims inflation, and importantly were also able to give valid reasons why.

Some candidates struggled with the calculation aspects of this question, and this may have impacted on their time management during the paper. Better prepared candidates manage their time such that they have sufficient time to devote to questions across the paper, in order to generate scoring points. Candidates not as well prepared may feel rushed attempting their final question and not score as well as a result.

[Paper Total 100]

END OF EXAMINERS' REPORT



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