Actuarial Society of South Africa

EXAMINATION

5 May 2022

Subject A311 — Actuarial Risk Management

Paper One

Time allowed: *Three hours and fifteen minutes, plus an additional five minutes to allow for scrolling on the ASSA Exam Platform*
Total marks: *100*

INSTRUCTIONS TO THE CANDIDATE

1. *Ensure that you are logged in and authenticated through Examity before you attempt the examination.*
2. *Questions are only available on the ASSA Exam Platform and may not be printed.*
3. *Submit all your answers on the ASSA Exam Platform only. No uploads of answers (handwritten or otherwise) to the ASSA Exam Platform will be accepted.*
4. *You may not use any other computer program (e.g. Email, MS Word or Excel) or files, nor open any other browser during the examination.*
5. *You may not use a Formulae and Tables book during the examination. Any such information that may be required will be provided to you within the examination.*
6. *You are strongly encouraged to use the first 15 minutes as reading time only, however, you may start answering the paper whenever you are ready.*
7. *Mark allocations are shown in brackets.*
8. *Attempt all questions.*
9. *Show calculations where appropriate. You may use blank paper to carry out rough work calculations. You may use a calculator from the approved list only.*
10. *You may return to your answers to review and amend during the allotted examination time. Once you are happy with your answers you need to **Finish all and Submit** your work. Once you have submitted you will not be able to make any more changes to your answers.*
11. *You must submit all work BEFORE the end of the allotted examination time. Take this into account when planning your review and submission. There will be no time announcements.*
12. *An option to opt out of the examination will become available one hour after the official examination start time. If you select the Opt-Out option, you agree and understand that your entire script/answers will be deleted and cannot be retrieved at a later stage and that your script or part thereof will not be put forward for marking.*

Note: Answers will be saved automatically during the examination if you are connected to the ASSA Exam Platform. However, the Actuarial Society of South Africa will not be held responsible for loss of data where candidates have not followed instructions as set out above.

END OF INSTRUCTIONS

QUESTION 1

VibrantLife is a mutual society life insurer that targets healthy, educated individuals with a range of life insurance products.

i. Compare and contrast the differences between a life insurer set up as a mutual society versus a public listed company. [4]

ii. Describe the relationship that exists between an individual's education and their expected mortality and morbidity. [4]

In line with their brand image, VibrantLife also has a reputation as a "responsible corporate citizen".

iii. Outline actions that VibrantLife might have taken to gain this reputation. [3]

[Total 11]

QUESTION 2

i. Outline the advantages and disadvantages of appointing industry specialist investment analysts when constructing and managing an equity portfolio. [4]

A listed investment trust company, ITC, holds investments in underlying listed and unlisted companies. You have read that the ITC shares are currently trading at a significant discount to the net asset value (NAV) of ITC.

ii. Explain what this means and why this phenomenon may be occurring. [5]

[Total 9]

QUESTION 3

You work for a mid-sized long-term insurance company that is about to list its shares through an initial public offering. In the run up to the listing, the company has appointed a Chief Risk Officer, to whom you report.

You have been asked to review the risk management processes and measures and ensure that they meet the accepted standards for listed companies.

i. Outline the advantages of regular risk reporting at a financial services company.
[4]

ii. Describe the advantages and disadvantages of using Value at Risk (VaR) as a measure of risk. [3]

[Total 7]

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QUESTION 4

i. List six key risks relating to data. [3]

ii. A project team is responsible for ensuring that a newly established general insurance company stores good quality data. Outline the key requirements to ensure this is achieved, including those relating to the design of the proposal and claims forms. [8]

[Total 11]

QUESTION 5

DeltaLife is an innovative life insurance company specialising in critical illness products where clients have a lot of flexibility when it comes to structuring their benefits.

The team you work in is responsible for the model that produces the incidence rates over time for a given insured profile and selection of cover. These incidence rates are then passed onto the admin system which in turn calculates the office premium on a given quote. All of this happens in real time.

i. Briefly discuss the ideal operational requirements for such a model. [7]

After a great deal of success in the local market, DeltaLife is looking to expand to other countries.

ii. List the features of a market that you would need to research before considering expansion to another country. [6]

[Total 13]

QUESTION 6

MiniCo is a furniture manufacturing company that has been operating for many years. They currently sponsor a retirement benefit scheme for their employees. Some members are on a defined benefit arrangement, while employees who joined the company in the last ten years are all on a defined contribution structure.

i. List the disclosures you would expect to see with regards to MiniCo’s retirement benefit scheme in their financial reports. [4]

MaxCorp is a large conglomerate that is on the verge of buying MiniCo. They have expressed a desire to close down MiniCo’s benefit scheme in favour of running only the MaxCorp benefit scheme. Both MiniCo and MaxCorp agree that the MiniCo’s members should be no worse off because of the closure.

ii. Discuss the options available to the companies to achieve this objective. [6]

[Total 10]

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QUESTION 7

A Government in a developed country has offered a flat-rate pension that increases in payment in line with national average earnings. This pension is for all citizens who have paid contributions to the social security system for at least 20 years of their working lives.

However, with the average age at death increasing, the Government is looking to reduce costs. The Government is considering amending the pension using one or more of the following remedies:

– pension to be means-tested dependent upon an individual's level of other income
– pension payable based on contributions being made for at least 30 years of an individual's working lifetime
– the pension to increase with consumer price inflation

Discuss the merits of each of the three proposed remedies.

[Total 10]

QUESTION 8

Awesome Gaming Experiences (AGE) is a company that arranges in-person events where computer gamers come together to compete in tournaments. Together with local and international sponsors, they are busy arranging the largest ever tournament of StarBattle, a very popular game with millions of players worldwide. Three months from now, the best players from across the world are invited to meet at a stadium in Cape Town, South Africa, to compete for a slice of the prize pool, set at US$2m in total. The event will take place over three days and AGE is expecting at least 15,000 spectators per day to watch the action live at the venue.

List ten potential risks that would need to be managed for this event. For each risk give a practical mitigating action.

[Total 10]

QUESTION 9

T-Sure is an insurance company specialising in providing general insurance products for the tourism and hospitality sector. To date their focus has been on insuring the buildings, contents and vehicles of hotels, guesthouses, lodges, and restaurants.

Management is keen to grow the business and have been looking at ways to expand. One consideration is for T-Sure to add public liability insurance to their current product offering.

i. Describe public liability insurance and give two distinct examples of how a claim might arise for T-Sure's clients. [4]

ii. Explain why the events covered by T-Sure's public liability insurance are likely to meet the key requirements of insurable risks. [3]

iii. Outline the business risks that T-Sure might be exposed to with this expansion. [12]

[Total 19]

[GRAND TOTAL 100]

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END OF EXAMINATION