EXAMINATION

17 May 2019

Subject F206 – Banking
Specialist Applications

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. Follow log in and saving instructions issued to you at the exam venue.

2. Save your work throughout the exam.

3. You are required to submit your answers in Word format only using the template provided. You MAY NOT use any other computer program (e.g. Excel) during the examination.

4. You have 15 minutes at the start of the exam in which to read the questions. You are strongly encouraged to use this time for reading only, but notes may be made. You then have three hours to complete the paper.

5. You must not start typing your answers until instructed to do so by the invigilator/supervisor.

6. Mark allocations are shown in brackets.

7. Attempt all questions, beginning your answer to each question on a new page.

8. You should show calculations where this is appropriate. If necessary, an answer book may be used for this purpose.

Note: 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.

AT THE END OF THE EXAMINATION

Check that you have saved your work as per instructions given to you.
Hand in your question paper with any additional sheets firmly attached.

In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator from the approved list.

QUESTION 1

Bank A is an international bank headquartered in South Africa and offers only Corporate products. Bank A is looking to expand its product offerings to include Retail products in the rest of Africa.

Bank B is an international bank headquartered in Nigeria and currently offers both Retail and Corporate Banking products in several countries around the rest of Africa.

Bank A is considering purchasing Bank B's rest of Africa business. Management of Bank A is concerned that it would need to be able to ensure that its financial statements, as well as its capital submissions to the South African Reserve Bank, are compliant with South African regulations.

Discuss the key considerations for Bank A in determining whether to go ahead with this transaction.

[Total 15]

QUESTION 2

The development of cryptocurrencies has led to debate around the potential benefits that these currencies hold to society.

i. Describe what crypto currencies are, the technology that enables them and explain some of the potential risks and benefits of crypto currencies to both customers and banks.

[8]

The cash investment division of your bank (JHB Bank) has proposed creating a platform for customers of the bank to trade in two Cryptocurrencies: BitCoin and Ethereum. The head of that division believes this will grow the overall investment book of the bank. He also believes it would grow deposits with the bank (both crypto and standard currencies) which would thus enhance the funding position of the bank.

ii. Explain how this could be done operationally and highlight the risks involved for the bank.

[12]

iii. Describe possible advantages and disadvantages of allowing this functionality within the bank.

[3]

[Total 23]

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QUESTION 3

A large South African bank is currently operating under the Advanced Measurement Approach for the calculation of Operational Risk Capital (under Basel II). It currently offers a wide range of lending products; however, its primary exposure is to Retail exposures. The Bank currently only operates in South Africa.

i. Briefly explain the AMA approach for calculating Operational Risk capital under Basel II.

[3]

The Bank's CFO has recently read articles and publications on Basel IV, and is concerned with the capital implications of moving back to a more simplified approach. She has asked you to provide her with more information on the Standardised and Basic Indicator Approaches and potential implications of the change to the Bank. She has specifically requested a brief report discussing the main advantages and disadvantages of the current Advanced Measurement Approach compared to the more simplified approaches (Standardised or Basic Indicator Approach).

ii. Discuss the points you would make in your report, making a comparison between the Basic Indicator Approach and Standardised Approach, and the current Advanced Measurement Approach.

[18]

[Total 21]

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QUESTION 4

A large South African bank has successfully implemented IFRS 9 for the calculation of its credit risk provisions for financial reporting purposes. It currently offers both Retail and Wholesale lending products, and its key exposure is to Retail Mortgages and Credit Cards. The Bank also has existing Basel models in place and is currently AIRB accredited.

The bank has recently completed its annual monitoring exercise and you have produced the following table illustrating the breakdown of exposure by stage. The analysis below shows the actual development of the portfolio that was in force at Q1 2018.

Portfolio	Stage	Q1 2018	Q2 2018	Q3 2018	Q4 2018
Mortgages	Stage 1	800,000	750,000	725,000	700,000
	Stage 2	150,000	200,000	200,000	225,000
	Stage 3	100,000	100,000	125,000	125,000
	Total	1,050,000	1,050,000	1,050,000	1,050,000
Cards	Stage 1	400,000	350,000	300,000	250,000
	Stage 2	100,000	150,000	200,000	250,000
	Stage 3	50,000	50,000	50,000	50,000
	Total	550,000	550,000	550,000	550,000
Wholesale	Stage 1	2,000,000	1,800,000	1,900,000	1,700,000
	Stage 2	300,000	500,000	400,000	550,000
	Stage 3	50,000	50,000	50,000	100,000
	Total	2,350,000	2,350,000	2,350,000	2,350,000

i. Analyse and comment and on the results.

[12]

ii. The CRO is concerned that, should the staging results be because of issues in the underlying IFRS 9 probability of default models, that a full redevelopment of the banks AIRB models would also be required. Comment on the CRO's concerns.

[2]

iii. The Bank has just completed its most recent quarterly reporting exercise and the CFO has indicated that she would like to understand the drivers of their current provisions better, particularly actions that can be taken to optimise the provisions on the Bank's loan portfolio from a strategic point of view.

Discuss the potential ways in which the Bank could manage its IFRS 9 Expected Credit Loss provisions.

[8]

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To incorporate forward looking information into the provisions, the Bank has developed the following macroeconomic linkage model for Loss Given Default (LGD).
(*PPI is Property Price Index, GDP is Gross Domestic Product*).

$$\mathrm{LGD}_{\mathrm{Mortgages}} \sim 0.45 - 0.05.(\Delta\mathrm{GDP}) - 0.3.(\Delta\mathrm{PPI}) + \varepsilon$$

iv. Comment on the above relationship, including general best practice in developing statistical models.

[4]

v. Describe the steps the Bank would have taken in developing this model.

[10]

vi. The CRO and CFO have decided that it is not possible to capture all possible risks in the underlying models, and so are looking to hold specific management overlays over and above the base provisions. Discuss the concept of management overlays and the process to be followed in establishing these.

[5]

[Total: 41]

[Grand Total 100]

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END OF EXAMINATION

