EXAMINATION

27 May 2024

Subject F107|B100 — Banking Fellowship Principles

Time allowed: *Three hours and twenty minutes (which includes five minutes for downloading and uploading your answer document)*

Total marks: *100*

INSTRUCTIONS TO THE CANDIDATE

1. *Ensure that you are logged in and authenticated through Examity before you attempt the examination.*
2. *The question paper is only available in the ASSA Exam Platform as a PDF download and may not be printed. Copy/paste of questions or parts thereof is allowed from the question paper to your Word answer document only.*
3. *Download the Word answer document template from the ASSA Exam Platform. Save this Word answer document on your desktop using your Candidate Number as filename. You are required to submit your answers in Word format ONLY using this document. No answers in any other format (e.g., handwritten) will be accepted. Save work regularly.*
4. *Ensure that your Candidate Number appears in the "header" of your Word answer document. [Double-click on the header at the top of the Word document, input your Candidate Number only in the header, then press "Esc" to close the header.]* ***Do not use your name or member number anywhere in your Word answer document****.*
5. *You may not access any file from your computer, use any other computer program (e.g., Email or Excel), or open any other browser during the examination. The use of Grammarly and Grammarly Premium or similar add-ins are also not permitted in examinations. Microsoft spellcheck is allowed.*
6. *You may not use any other material (e.g., a Formulae and Tables book) during the examination. Any such information that may be required will be provided to you within the examination.*
7. *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.*
8. *Mark allocations are shown in brackets.*
9. *Attempt all questions.*
10. *Show calculations where appropriate. You may use blank paper to carry out rough work calculations. You may use a calculator from the ASSA-approved list only.*
11. *Upload your Word answer document only into the ASSA Exam Platform. Once you have uploaded your document, you must click on* ***Finish Attempt*** *to save your document. You will still be allowed to go back and make changes (****Review Attempt****) if you have time.*
12. *Once you are satisfied with your uploaded document, click* ***Finish attempt*** *and* ***Finish all and Submit****. Once you have submitted you will not be able to make any changes.*
13. ***You must submit your Word answer document BEFORE the end of the allotted examination time.*** *You must stop writing and start uploading during the last five minutes. Take this into account when planning your review and submission. There will be no time announcements.*

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.

END OF INSTRUCTIONS

QUESTION 1

Oak Bank is a corporate and investment bank that currently determines its market risk regulatory capital using the Standardised Approach (SA) and is considering applying to the local regulator for approval to use the Internal Models Approach (IMA).

i. Outline the advantages and disadvantages for Oak Bank of moving from the Standardised Approach to the Internal Models Approach for the market risk regulatory capital calculation.

[6]

The Fundamental Review of the Trading Book (FRTB) is a set of proposals by the Basel Committee on Banking Supervision for a new market risk-related capital requirement for banks.

ii. Outline the key changes introduced by the FRTB.

[2]

iii. Discuss the impact that the Fundamental Review of the Trading Book (FRTB) could have on Oak Bank's decision to pursue IMA application, considering likely FRTB implementation timelines.

[2]

A proprietary trading desk is a unit within a corporate and investment bank that trades financial instruments with the bank's own money, rather than on behalf of its clients.

iv. Outline possible reasons why a bank would want to operate a proprietary trading desk.

[2]

[Total 12]

QUESTION 2

Dandelion Bank offers a broad range of Retail, Commercial and Wholesale lending products across multiple jurisdictions. The bank has recently embarked on a process to classify credit exposures according to their impact on carbon emissions. These classifications will be used to regularly assess the composition of their loan portfolios, which will enable the understanding of and assist with decision making related to their financed emissions.

i. Define financed emissions and explain why Dandelion Bank may want to understand the emissions-based composition of their loan portfolios.

[3]

The "Principles for Effective Risk Data Aggregation and Risk Reporting" published in the Basel Committee's BCBS 239 standard sets out principles that banks are required to comply with when aggregating and reporting on risks. The 11 key principles that banks need to comply with under BCBS 239 relate to governance, technology infrastructure, integrity, completeness, timeliness, adaptability, accuracy, comprehensiveness, clarity, frequency, and distribution.

Dandelion Bank is fully compliant with BCBS 239 across its existing risk universe.

ii. Discuss factors that Dandelion Bank should consider when setting up BCBS 239-compliant risk data aggregation and reporting processes for financed emissions, referencing the BCBS 239 principles and relevant examples for each principle.

[12]

[Total 15]

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QUESTION 3

i. Explain the concept of behavioural tenor as it applies to both deposits and loans, highlighting the importance of stable and non-stable deposits.

[3]

ii. Explain the significance of determining the behavioural tenor of deposits and loan products in managing liquidity risk for a bank.

[3]

You have been tasked with conducting an analysis to determine the behavioural tenor of a bank's deposit and loan products.

iii. Describe your methodology step-by-step, addressing potential challenges in interpreting the data and ensuring credibility and conservatism in the resulting estimates.

[6]

A colleague has read about the introduction of a Deposit Insurance Scheme by the regulator. He suggests that due to the introduction of the scheme, banks may take on more risks in expanding their loan portfolios.

iv. Discuss any potential impacts on the behavioural tenors of the deposit and loan portfolios with the introduction of a Deposit Insurance Scheme and whether your colleague’s comment is valid.

[4]

[Total 16]

QUESTION 4

i. Define the term Net Interest Margin (NIM) and explain its significance in the context of a bank's operations.

[2]

ii. Explain the main revenue streams for banks, focusing on net interest income, non-interest income, and trading income.

[3]

iii. Analyse the impact of changing interest rates on a bank's net interest income, considering the following scenarios:
- rising interest rates, and
- a sustained high or low interest rate environment.

[4]

iv. Discuss how technological advancements and changes in regulatory requirements could affect a bank's cost ratios and overall profit margin.

[8]

[Total 17]

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QUESTION 5

You work for a reputable audit and consulting firm. The Chief Risk Officer of Polaris Bank has engaged your firm to provide assurance that the bank's anti-money laundering processes are effective and compliant with relevant regulatory requirements.

i. Define money laundering and outline the main phases of money laundering.

[2]

ii. Explain the role that the Financial Action Task Force (FATF) plays in combatting money laundering.

[3]

Polaris Bank follows a risk-based anti-money laundering approach, using a combination of rules-based approaches and statistical models to assign clients and transactions to risk categories. The bank applies enhanced due diligence processes to clients and transactions rated as high risk.

iii. Outline risks that could result in Polaris Bank's anti-money laundering approach being ineffective or non-compliant with regulatory requirements and suggest ways in which these risks can be mitigated.

[8]

iv. Outline the information that you would request from Polaris Bank to support your review.

[7]

[Total 20]

QUESTION 6

You are an actuarial student working in the business banking (small to large businesses) analytics team. You have been assigned to develop loss given default (LGD) models.

LGDs may be expressed as "*1 - Recovery Rates*".

i. Describe the factors that could impact recovery rates for a business banking portfolio.

[4]

ii. Outline the data required to estimate recovery rates for a business banking portfolio.

[2]

Commercial Property Finance (CPF) refers to bank lending to acquire, develop, or refinance commercial real estate properties. These could include: office buildings, retail shopping malls, industrial facilities, warehouses, and other property types.

The CPF management team has contacted you to assist them with their LGD modelling. The team has noted that CPF deals from the last 3 years are being originated at LTV (loan to value) of 75%, therefore, LGD estimates for the portfolio should be 0%.

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iii. Discuss the appropriateness of the comments made by the management team.

[5]

The following default data is available for the CPF portfolio:

	2019	**2020**	**2021**	**2022**
Number of defaults	27	34	24	20
Balances at default (L$)	730 000	800 000	680 000	460 000
Number of defaults written off	20	18	9	4
Balances written off (L$)	328 500	400 000	204 000	82 800
Number of cures	5	12	9	8

The CFO has been doing some research on LGDs. She has suggested that the LGD be estimated using the following approach and assumptions:

$$LGD = P(W) \times LGW + P(C) \times LGC$$

Where

$P(W)$: probability of an account in default eventually being written off

$P(C)$: probability of an account in default eventually curing

LGW: expected loss given a default being written off

LGC: expected loss given a default curing

- P(W) + P(C) = 1
- P(W) = number of write-offs / (number of write-offs + number of cures)
- LGW should be greater than 0%.
- LGC is to be fixed at 5% for all periods.

The CFO has also asked you to check the data as the total defaults do not add up to the number written off and number cured.

iv. Discuss the assumptions and data issues highlighted by the CFO.

[4]

The CFO has asked for an estimate for LGD for the CPF portfolio given the data available. She has also queried what a stressed LGD level could be in an economic downturn.

v. Estimate the LGD for the portfolio and comment on an appropriate range for a stressed LGD estimate. State your assumptions and show workings.

[5]

[Total 20]

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END OF EXAMINATION

