# EXAMINATION

*15 May 2026 (am)*

# Subject F105 — *Finance and Investment* Fellowship Principles

*Examination writing time:* *Three hours and fifteen minutes (includes reading time)*

*Upload time:* *Five minutes*

*[Total time on examination countdown timer: Three hours and twenty minutes]*

*Total marks:* *100*

## *INSTRUCTIONS TO THE CANDIDATE*

***Failure to adhere to any of these instructions could incur examination sanctions including disqualification from the examination.***

1. *Your examination countdown timer reflects your TOTAL examination time. Reading and writing time is three hours and fifteen minutes.* ***You may NOT continue to write during the five minutes upload time as this could lead to disqualification from the examination.***

2. *The question paper is available on the ASSA Exam Platform as a PDF download only 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. *You may not access any file from your computer, use any other computer software (e.g., Email), or open or use any other browser, collaboration tools or AI tools, including those embedded in MS Word and Adobe AI assistant (e.g. Copilot, ChatGPT etc.) during the examination. Embedded AI tools must be disabled. You may not use Grammarly, Grammarly Premium or similar built-in language and grammar tools which must also be disabled. Microsoft Word spellcheck is allowed.*

4. *Use only the Word answer template provided in your personal folder under the "Exam" icon on your desktop. The file has already been named using your candidate number. Please confirm that your candidate number matches the candidate number used in the file name. If there is any discrepancy, notify an invigilator immediately. Do not rename your file and do not create multiple versions.*

5. *An Excel template will be available to use for calculation purposes and for copying and pasting (via Paste Special – Picture) of tables or calculations from the Excel worksheet into your Word answer document that you will submit for marking at the end of your exam. All workings and results should be clearly labelled and set out. Excel cell references should not appear in the Word answer document submitted. You must not upload the Excel file onto the ASSA Exam Platform as this file will not be submitted for marking.*

6. *Ensure that your* ***full Candidate Number*** *is entered 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. Your candidate number must be the only identifier used. Submissions that are incorrectly labelled or cannot be clearly identified by candidate number may not be marked and may result in forfeiture of the examination attempt.***

7. *You are required to submit your answers in Word format ONLY. No answers in any other format (e.g. handwritten) will be accepted. Save work regularly.*

8. *You are not permitted to bring any other material into the examination (e.g. a Formulae and Tables book). Any such information/material that may be required will be provided to you in the examination.*

9. *You are strongly encouraged to use the first fifteen minutes as reading time only, however, you may start answering the paper whenever you are ready.*

10. *Mark allocations are shown in brackets.*

11. *Attempt all questions, starting each on a new page (as provided for in the Word answer template).*

12. *Show calculations where appropriate. No materials may be used other than blank paper for calculations. Only calculators from the ASSA-approved list are permitted.*

13. *Upload a single version of your Word answer document only to the ASSA Exam Platform. Once uploaded, click **Finish Attempt.** You may still use **Return to attempt** to check that the correct version has been uploaded, provided you have time remaining. When you are satisfied with your upload, you must click **Submit all and Finish** to complete your submission. After selecting this option, no further changes can be made. Candidates remain fully responsible for ensuring that the correct file is uploaded, in the required format, size, and location, within the scheduled examination time. The submitted file will be treated as the final version and cannot be replaced or amended. **Please note that no typing or editing of answers is permitted during the final five minutes allocated for upload time.***

14. *ASSA will not retrieve, replace or amend answer scripts where incorrect, incomplete or unintended versions are uploaded, nor where candidates subsequently notify ASSA after the conclusion of the examination session that an incorrect file was submitted.*

15. ***You must submit your Word answer document onto the ASSA Exam Platform BEFORE the time on your examination countdown timer runs out.***

**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. The onus remains on you to read and implement all examination instructions.**

***END OF INSTRUCTIONS***

## QUESTION 1

An investment management company is launching a new domestic equity unit trust.

i. Describe the legislative framework for setting up a unit trust, and the broad responsibilities of the parties involved. [6]

ii. Outline the advantages and disadvantages of appointing industry specialist investment analysts when managing an equity portfolio. [3]

A drug traditionally used to treat diabetes has been found to cause diminished appetite and significant weight loss. The drug is therefore gaining popularity for alternative use as a treatment for obesity – a rising epidemic in many developed countries. The drug is currently expensive and can only be taken in injectable form, but some pharmaceutical companies are developing more easily accessible and cheaper forms of the drug.

iii. List three developed market equity industry sectors most likely to be impacted by this development and discuss how affected companies in those sectors may be impacted. [9]

[Total 18]

## QUESTION 2

An investor has invested an amount in a money market fund. Shortly after making this investment, a global financial crisis develops and asset classes across the board experience significant losses. The investor feels he is protected as he believes money market funds cannot experience negative returns.

i. Based on the characteristics of money market funds, explain why the investor might believe this. [4]

To his dismay, when the investor checks on the value of his fund investment during the financial crisis, he finds that his fund value is slightly less than the amount he originally invested. He is particularly surprised since the money market fund he selected had, at the time of the investment, delivered historical returns well in excess of its competitors.

ii. Provide possible reasons why the fund value has gone down. [4]

[Total 8]

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## QUESTION 3

You are an actuary at an investment consultancy that specializes in asset-liability management. A company has approached your firm to design an asset portfolio to meet its contractual promises (liabilities) to fund the post-retirement medical scheme contributions/premiums of company retirees for the remainder of their lives. The benefit was last offered to new employees 10 years ago.

i. Define Liability Driven Investment (LDI) and state its aims.

[3]

ii. With reference to the characteristics of the liabilities, discuss LDI approaches to meet the company's post-retirement medical scheme contribution liabilities. Consider all relevant factors in your discussion.

[10]

iii. After implementing the LDI strategy the company has approached you for advice on how to increase the return on its bond assets without changing to other asset classes. Describe ways in which this could be achieved given the company's overall objectives and outline distinct advantages and disadvantages of the different approaches.

[4]
[Total 17]

## QUESTION 4

i. List the tax-related factors that individuals need to consider when selecting investments.

[3]

A government running a large, unsustainable fiscal deficit wishes to increase the uptake of its bond issuances by exempting coupons on conventional government bonds from personal income tax (applicable to residents of the country). Individuals may access such bonds directly on the local bond exchange or via collective investment schemes.

ii. Discuss how this taxation change may impact yields on conventional government bonds and the tax position of individuals who are existing holders of government bonds.

[4]
[Total 7]

**PLEASE TURN OVER**

## QUESTION 5

A large local retail bank, Big Watt Bank (BWB), offers fixed deposits and housing loans. The housing loans are issued at a rate of interest which is linked to the short-term interest rate that the central bank determines quarterly.

i. Discuss the impact on BWB, and its lending practices, of a reduction in the short-term interest rate.

[4]

ii. Aside from the setting of the short-term interest rate, describe how other actions of the central bank may influence BWB's lending activity.

[4]

BWB is concerned that the central bank will lower interest rates at the upcoming rate review, and is considering an appropriate hedging strategy.

iii. Outline the relative merits of using an interest rate floor compared to an interest rate collar.

[3]

BWB decides to hedge the downward interest rate exposure using a floor. It will enter the floor which provides quarterly payments for a term of three quarters.

iv. Calculate the price of the interest rate floorlet for the second payment given the following assumptions:

| | |
|---|---|
| Notional amount: | R50 million |
| Forward interest rate volatility: | 5% p.a. |
| Forward annual reference rates, compounded quarterly: | |
| Q1 | 5.5% p.a. |
| Q2 | 5.2% p.a. |
| Q3 | 5.1% p.a. |
| Strike rate: | 5% p.a. compounded quarterly |

[6]
[Total 17]

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## QUESTION 6

An investor held long positions on two separate 6-month put option contracts on the same share, with the same maturity date:

| *Type* | *Strike price* |
|---|---|
| American | 18 |
| European | 30 |

When the options were purchased, the share price was 20 and when they expired, the share price was 26. During the 6-month period the share price reached a minimum price of 15 and a maximum price of 32.

i. Describe the rights of the investor under each option contract and indicate how these would have differed in the case of call options.

[3]

ii. Calculate the payoff for each put option contract if the investor exercised each option at the optimal time.

[3]

Another investor purchased a Bermudan 6-month call option on the same share with strike price 24, where exercise was allowed at any time following an initial 3-month period.

iii. Determine the share price range, that if exercised at the optimal time, would allow this to be a more profitable option strategy compared to those calculated in part (ii).

[3]

[Total 9]

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## QUESTION 7

A defined contribution pension fund is reviewing the performance and benchmark of their "long-term capital growth" multi-asset portfolio for active members. The portfolio forms part of a range of investment choices available to active members.

The table below contains the money-weighted benchmark and multi-asset portfolio returns for 2024. The benchmark and actual fund allocations for 2024 are also given in the table.

| | Returns | | Allocation | |
|---|---|---|---|---|
| | Benchmark | Portfolio | Benchmark | Portfolio |
| Equity | 18% | 16% | 50% | 45% |
| Bonds | 13% | 10% | 25% | 35% |
| Offshore | 15% | 19% | 25% | 20% |

i. Analyse the portfolio performance for 2024 into sector selection and stock selection (in total and per asset class) returns.
[4]

ii. Compare and contrast the roles of money-weighted returns and time-weighted returns in performance measurement.
[2]

iii. Outline how the annual time-weighted return is approximated for a portfolio, where quarter-end portfolio values and exact cashflow data are available.
[2]

The pension fund now reviews their multi-asset portfolio benchmark. Two benchmarks are proposed (gross of fees):

a. An explicit benchmark of inflation plus 4% p.a., where the 4% reflects the trustees' risk appetite.

b. A specified target allocation percentage per asset class, as determined by means of a stochastic modelling exercise aimed at achieving a portfolio return of inflation plus 4% p.a.

iv. Discuss the appropriateness of either benchmark type for the purposes of the portfolio for active members.
[6]
[Total 14]

## QUESTION 8

i. List the fundamental factors that credit rating agencies should focus on when rating a company or entity.
[4]

BondCo Ltd. is an asset manager specializing in corporate bonds. The firm is considering a large investment in the debt of XYZ Corporation, a multinational company recently downgraded from BBB to BB+ by a major credit rating agency, due to rising leverage and declining cash flows.

ii. Discuss the potential consequences of the downgrade to institutional investors, as well as to the issuing company.
[4]

iii. Describe two inherent limitations of relying on credit rating agencies for investment decisions, and suggest actions that a government or regulatory body can put in place to counter these limitations.
[2]
[Total 10]

**END OF PAPER**

 