

EXAMINATION

12 April 2005 (pm)

Subject ST5 — Finance and Investment Specialist Technical A

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. *Enter all the candidate and examination details as requested on the front of your answer booklet.*
2. *You have 15 minutes at the start of the examination 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.*
3. *You must not start writing your answers in the booklet until instructed to do so by the supervisor.*
4. *Mark allocations are shown in brackets.*
5. *Attempt all 7 questions, beginning your answer to each question on a separate sheet.*
6. *Candidates should show calculations where this is appropriate.*

AT THE END OF THE EXAMINATION

Hand in BOTH your answer booklet, with any additional sheets firmly attached, and this question paper.

<p><i>In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator.</i></p>

- 1**
- (i) State the taxation factors and influences on these factors that need to be considered when selecting investments which maximise after tax returns. [6]
 - (ii) Outline the three main systems of corporation tax. [3]
- [Total 9]

- 2** You are a fund manager managing a portfolio of international equities. As part of a presentation to trustees you have presented the following table:

<i>Region</i>	<i>Fund Return</i>	<i>Market Return</i>
US	+5.5%	+5.1%
Japan	+9.4%	+8.3%

Market returns are stated with reference to the S&P 500 for the US and Topix for Japan.

A trustee points out that the Dow Jones Index rose by 6% over the period and the Nikkei rose by over 10% and therefore the fund has actually underperformed in these regions.

Outline the points you would make in your response. [8]

- 3** An insurance company has a line of shares held within its shareholders' funds. The shares are in a quoted investment management organisation to whom the insurance company has outsourced the management of its policyholders' funds and, due to good recent performance, these funds are experiencing significant positive cashflows. The rest of the shareholders' funds are invested in bonds and property. The insurance company wishes to transfer half the line of stock to the policyholders' global equity fund at a discount to the prevailing bid price and has been required by the regulator to commission an independent valuation of the discounted share price at which the transfer should take place.

- (i) State the key objectives of financial regulation. [3]
 - (ii) Explain why the company might wish to transfer the shares to the policyholders' funds. [3]
 - (iii) (a) Outline the principal factors to be considered in determining an appropriate price.
 - (b) List the additional information you would consider in setting the price. [3]
 - (iv) Set out the other business issues that should be considered by the committee responsible for agreeing the discount on behalf of the policyholders. [11]
- [Total 20]

- 4**
- (i) Describe how to construct a zero coupon yield curve. [5]
 - (ii) Define the par yield for a bond. [2]
 - (iii) You have the following information for three conventional gilts:

Gilt 1: coupon 6.75%, maturity 1 year, price 102.01
 Gilt 2: coupon 9.50%, maturity 2 years, redemption yield 4.90%
 Gilt 3: coupon 7.75%, maturity 3 years, price 110.41

Assume that gilts pay annual coupons and that a coupon has just been paid.
 Calculate the spot yields for the next 3 years. [5]
 [Total 12]

- 5** The table below contains information about a pension fund and index returns. The benchmark for the fund is an investment that is 50% equities and 50% bonds.

	<i>31/12/03 Values (£m)</i>	<i>31/12/04 Values (£m)</i>	<i>Contributions (£m)</i>	<i>Investment Income (£m)</i>
Equities	600.0	700.0	-12.0	15.0
Bonds	350.0	450.0	63.0	25.0
Cash	50.0	50.0	-1.0	1.0
Equity Total Return Index	1,000.0	1,115.0		
Equity Index Yield	3.00%	3.12%		
Bond Total Return Index	1,220.0	1,299.3		
Bond Index	275.0	280.5		
Base Rate	3.50	4.00		

- (i) Defining all formulae used and stating any assumptions made, analyse the performance of the fund. [11]
- (ii) Comment on the results of your analysis and any investment features that the data may suggest. [9]
 [Total 20]

- 6** In *Nestlé v. National Westminster Bank plc* [1994] the judge considered that decisions of trustees should be judged by modern portfolio theory and that the risk level of the whole portfolio is considered rather than just individual investments.

- (i) Outline how Behavioural Finance challenges this view. [10]
- (ii) Give examples of how trustees could make poor manager selection decisions based on these behaviours. [4]
 [Total 14]

7 Spenser & Michael (S&M) is a UK-based food retailer which is well known throughout Europe and the Far East but largely unknown in the United States of America. S&M have tried to borrow US\$500m at a fixed rate of interest in US dollars but the interest rates S&M can secure are prohibitively expensive.

S&M have been quoted a five-year fixed rate of 6% per annum for a sterling denominated loan.

BIM is a US-based food retailer and would like to borrow the sterling equivalent of US\$500m over five years at a fixed rate of interest in sterling. Like S&M, BIM has been quoted prohibitively expensive rates for a sterling loan.

BIM has been quoted a five-year fixed rate of 5.25% per annum for a US\$ denominated loan.

At the time of the transaction, the yield on five-year government bonds is 5.25% in the UK and 4.75% in the US.

You are the head of the currency swap desk of a global investment bank.

- (i) Describe, using the above information, the factors that will influence the design of a five-year currency swap. [8]
- (ii) Design a five-year currency swap for S&M and BIM that will net the global investment bank 0.45% per annum over the life of the swap while ensuring that S&M and BIM have no exchange rate risk on their exchange of interest payments. [4]
- (iii) Describe the risks that the global investment bank takes on in structuring this swap for BIM and S&M and how the global investment bank can hedge these risks. [5]

[Total 17]

END OF PAPER