EXAMINATIONS

September 1998

Subject E — Investment and Asset Management

Paper Two

Time allowed: Three hours

INSTRUCTIONS TO THE CANDIDATE

1. *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.*

2. *You must not start writing your answers in the booklet until instructed to do so by the supervisor.*

3. *Write your surname in full, the initials of your other names and your Candidate's Number on the front of the answer booklet.*

4. *Mark allocations are shown in brackets.*

5. *Attempt all 5 questions, beginning your answer to each question on a separate sheet.*

AT THE END OF THE EXAMINATION

Hand in BOTH your answer booklet and this question paper.

In addition to this paper you should have available Actuarial Tables and an electronic calculator.

1 A substantial UK-based company wishes to raise the sum of £200 million to finance a capital project in continental Europe. Positive cash flows from the project are unlikely to commence until five years following initial investment, at which time it is expected that most countries in Europe will be participating in a single currency. The company does not wish to raise new equity capital, preferring to increase its level of indebtedness. You have been appointed as investment advisor to the company.

(i) List the possible choices of loan finance available and the characteristics of each type. [5]

(ii) Discuss the risks and benefits for this company associated with each of the above alternative sources of finance. [6]

(iii) Discuss the initial investigations which will be required to be made on behalf of the company in considering the issuing terms of a loan. [10]
[Total 21]

2 You are a consulting actuary advising a corporate pension fund client on matters relating to its investment policy. The liability characteristics of the fund are typical of UK pension funds subject to external performance measurement. At present half of the fund is managed by a subsidiary of the parent company, which has no external funds under management. Performance of this part of the fund had historically been average, but has been deteriorating gradually relative to comparable funds over recent years. The other half of the fund is managed on a segregated basis by a small independent fund manager where returns had previously been spectacularly good. However, in the last year performance has fallen into the bottom quartile.

The trustees are concerned that recent large cash withdrawals from the fund associated with disposals of subsidiary companies of the corporate have caused reported performance to fall.

You have been asked to investigate the investment performance of both parts of the fund and to recommend changes where appropriate.

(i) Explain three methods of determining investment performance and explain which of the methods would be most appropriate for your investigation. [5]

(ii) Explain in detail the investigations you would carry out in order to evaluate the performance of the two investment managers after allowing for their costs and charges. [10]

Following the review the company decides that all funds will be managed by external parties.

(iii) Discuss the options available to the fund and the investigations that you would carry out to evaluate new managers. [6]
[Total 21]

3 (i) Discuss the advantages and disadvantages of collective investment vehicles from the perspective of the following investors in equities:

(a) an individual making a personal investment,
(b) a large institutional investor. [4]

(ii) A unitised fund holds the following portfolio:

Stock	*Nominal Holding*	*Mid Price (p)*
A	50	400
B	100	800
C	70	500
D	90	300
E	50	600
F	40	1000
G	80	700
H	20	600

The trust is expanding and there are 1000 units in existence at present. Assume that each security in the portfolio has a bid to offer spread of 1.5%, that stamp duty on purchases is 0.5%, and that there is an initial charge on the fund of 5% which is equivalent to its bid/offer spread.

(a) Calculate the bid and offer prices of the unitised fund. [3]

(b) Calculate the changed prices if one of the main unitholders asked to redeem most of his units. [2]

(c) Explain the circumstances in which the redeeming unitholder might receive a better price. [5]

The unitholder decides not to leave. Instead, a substantial new investor appears who is anxious to invest in the unitised vehicle but wishes to purchase units in the fund using a portfolio of stocks which she will transfer into the fund instead of cash.

(d) Discuss the considerations involved in determining whether or not to accept her stocks. [7]
[Total 21]

4 An investment company has agreed to manage money for a new global equity fund to be set up by a European bank. The new fund will be marketed to the bank's customers. You are the investment manager appointed to oversee the launch and subsequent management of the fund. The investment company has been asked to suggest an appropriate benchmark. At a recent meeting a Marketing colleague made the following statement.

"Historically investors in this region of Europe have had little experience of investing in equities and are relatively unsophisticated. The FT/S&P World Index has under 20% representation for mainland Europe because of its 50% weighting in the USA. It would be far better to set a strategic benchmark that would be one third Americas, one third Pacific including Japan and one third Europe. In this way the fund would have a simple benchmark that the customers would understand and an index giving greater weighting to Europe"

(i) Discuss the advantages and disadvantages of this suggestion relative to using the FT/S&P World Index as benchmark. [4]

(ii) Explain the administrative and investment management issues that would need to be addressed prior to launch. [9]

During discussions, the Bank has indicated that neither the FT/S&P Index nor the Marketing Manager's proposal is acceptable. The Bank states that

"More and more companies are becoming global in their outlook. It would be better to pick the best companies from each global industry sector. For example in assessing the motor industry the fund might hold Toyota but not Volkswagen. The fund should use a benchmark which is based on the global weighting of industry sectors rather than based on geographical market capitalisation."

(iii) Explain the issues that you, as investment manager, would face if this approach were adopted. [8]
[Total 21]

5 (i) Explain how a stochastic model for investment returns might be used to enhance an institution's knowledge of how its assets and liabilities might move relative to each other in the future, commenting on the limitations of such an approach. [4]

(ii) Over a period of years, Security A has been observed to give a very simple pattern of returns. The return in any one year is either 3%, 5%, 7% or 9% and each is equally likely.

A second security B is slightly more risky but is likely to return more. Its expected return is 10% and its variance is 8%. Furthermore, it is not independent of stock A. Over many years it has been observed to have a correlation co-efficient with stock A of 0.6.

(a) State the formulae for the expected return and variance of a security. Calculate both values in the case of security A. [3]

(b) A portfolio P has been constructed holding 60% in stock A and 40% in stock B. Calculate the expected return and variance of portfolio P. [5]

(c) Explain how you would go about constructing an efficient frontier for a more complicated portfolio. [4]

[Total 16]