INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

30 April 2020 (am)

Subject SP5 – Investment and Finance Specialist Principles

Time allowed: Three hours and fifteen minutes

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.

1 The trustees of a pension scheme are seeking to appoint a new investment manager of private debt.

(i) Outline the restrictions the trustees might consider incorporating into the investment agreement. [5]

(ii) Describe why it is important to have these restrictions. [3]

Two private debt managers, Manager X and Manager Y, present to the trustees. The key characteristics of the managers are:

Characteristics	*Manager X*	*Manager Y*
Country focus	Global	US
Covenant protection	All financial covenants	None
Currency hedged	Yes to $	Yes to £
Term to maturity	3 to 5 years	5 to 9 years
Private credit ratings	Yes	Not required
Investment return target	4% p.a. (net of fees)	6% p.a. (net of fees)

The trustees are discussing which of the two managers to appoint.

(iii) Suggest the factors the trustees should consider in deciding on whether to appoint Manager X or Manager Y. [3]
[Total 11]

2 A nuclear power company is setting up a fund to pay for the decommissioning costs of their nuclear power plant. The decommissioning costs include all aspects required to ensure the site is safe and wound down gradually over time. The costs are expected to begin in the next few years and to last for over 70 years, with the outgo reasonably level in real terms. The fund intends to invest wholly in government bonds issued in the home country.

(i) Explain why the company may struggle to match exactly its future liability costs. [6]

(ii) Suggest potential ways of solving the issues raised in (i). [5]
[Total 11]

3 A fund manager wishes to estimate the net present value of the income from the ordinary shares of ShopCo, a retail company, in which they are considering investing.

(i) List the information and assumptions needed in order to make this estimate. [2]

The fund manager estimates the net present value per share of ShopCo to be €7.00. They also have the following information about ShopCo:

Share price	€6.00
Profit before tax	€400m
Tax rate	25%
Dividend	€0.25
Number of shares	500m
Value of long-term assets	€850m
Total liabilities	€600m
Cash	€10m

(ii) Calculate the following:

(a) price earnings ratio
(b) dividend yield
(c) net asset value per share.

[3]

The fund manager also has the following information regarding stocks in the retail sector:

Average price earnings ratio	14
Average dividend yield	3%
Average price to net asset value	5

(iii) Suggest, with reasons, the type of investor who might be interested in investing in ShopCo. [3]

The fund manager observes that the market price of the shares is below the value they have estimated.

(iv) Suggest reasons for the difference between the net present value the fund manager has calculated and the share price. [3]

(v) Discuss how useful the net present value is in assessing the value of a share. [3]

[Total 14]

4 A fund manager has decided to invest in insurance-linked securities for the first time.

(i) State what is meant by an insurance-linked security. [1]

(ii) (a) Draw a diagram to illustrate the structure of an insurance-linked security.
(b) Describe the process of creating an insurance-linked security.
[6]

(iii) Suggest reasons why a fund manager might invest in insurance-linked securities. [2]

(iv) Discuss the factors that need to be taken into account before investing in insurance-linked securities. [3]
[Total 12]

5 The trustees of a large pension fund are in the process of looking at their benchmark. The current benchmark is a global index based on the weighted free market capitalisation of companies. The trustees think this is leading to greater exposure to certain geographical regions and industries. They are now considering the following alternatives:

- Weighting the exposure to countries by GDP and within countries using indices that give equal weight to the top 100 companies in that country.
- A capped benchmark where exposure to any one country is limited to 10% and within each country the benchmark is an index based on the weighted free market capitalisation of companies in that country.
- A benchmark similar to the one that is currently used, but with exposure to any one industry limited to 10%.

(i) Discuss the advantages and disadvantages of adopting these alternatives. [9]

(ii) Describe four investment styles. [4]

(iii) Outline the process for creating an index for one of the styles described in part (ii) in order to evaluate the performance of a fund that invested in that style. [5]
[Total 18]

6 A European food manufacturer, ChocCo, plans to purchase a US-based food manufacturer for \$1,000m and is funding \$500m of the acquisition cost with debt. ChocCo has no previous exposure to the US market.

(i) Suggest reasons why:

(a) ChocCo might want to expand into the US by acquiring a US-based food manufacturer.

(b) ChocCo might want to use debt to partially fund the acquisition.

[7]

ChocCo wanted to borrow the money at a fixed rate for 10 years in US dollars.

(ii) Suggest reasons why ChocCo might want to borrow the money as described above. [2]

ChocCo was unable to borrow dollars at an acceptable rate. Instead ChocCo has borrowed €450m for 10 years at 6.5% p.a. This compares to the yield on a 10-year government bond in ChocCo's domestic market of 1.0% p.a. The current dollar versus euro exchange rate is 1.11.

(iii) Propose reasons for the difference in the rate of interest that ChocCo pays compared to the government bond. [2]

(iv) Describe how ChocCo could use a currency swap to convert their euro interest payments into US dollar payments and how such a swap would be constructed. [6]

(v) (a) Describe the risks that a global investment bank would take on in structuring this swap.

(b) Describe how the bank might manage these risks.

[5]

[Total 22]

7 Following the financial crisis in 2008 a number of economists were interviewed and claimed that they had been expecting something like the crisis to occur; however, there was no record of them having expressed this opinion before the crisis.

(i) Describe the behaviour these economists were demonstrating. [3]

An investor has been investing their own money for a period of years despite the fact that a better return could have been produced by investing the money in a risk-free investment that produced a modest income.

(ii) Outline five behaviours that may have led to the investor continuing to invest as had been done in the past. [5]

An investment manager has to sell a number of stocks in the near future. They have decided to sell only those stocks that are trading above the price they paid for them and to make the sales the following Friday before they enjoy the weekend prior to a public holiday the following Monday.

(iii) Describe four behaviours that might account for these decisions. [4]

[Total 12]

END OF PAPER