INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

20 September 2023 (am)

Subject SP5 – Investment and Finance Specialist Principles

Time allowed: Three hours and twenty minutes

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

If you encounter any issues during the examination please contact the Assessment Team on T. 0044 (0) 1865 268 873.

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1 (i) Discuss the advantages and disadvantages of using performance measurement to determine the renumeration of a fund manager. [4]

A fund management group is about to launch a new fund and wants to evaluate the fund's performance. There are two proposals:

- Compare the fund to an index.
- Compare the fund to a competitor's fund.

(ii) List the attributes that any index would need to have to make it suitable to compare the fund against. [4]

(iii) Describe the limitations of using a competitor's fund. [3]

An index provider wishes to create a global corporate bond index and they plan to create a series of sub-indices.

(iv) (a) Suggest why the index provider wants to create the sub-indices.

(b) Suggest, with reasons, two possible sub-indices that may be created. [4]

[Total 15]

2 (i) Describe the main features of:

(a) an interest rate cap.

(b) an interest rate floor.

(c) an interest rate collar.

[3]

(ii) Discuss the advantages and disadvantages to a company in the aviation industry of using an interest rate collar to control its interest rate exposure on its debt. [4]

A company issues debt of $100 million for a term of 5 years on 1 January 2024. At the same time, it enters into an interest rate collar with an investment bank for the same principal amount and for the same time period. The features of the collar are as follows (all interest rates quoted are compounded half-yearly):

Cap	5%
Floor	3%
Tenor	6 months

The interest rates at the reset dates are shown below:

Reset date	*R (% p.a.)*
1 July 2024	4.7
1 January 2025	5.1
1 July 2025	3.8
1 January 2026	2.5

(iii) For each of the payoffs (caplets) due under the collar contract:

(a) calculate the amount of the payment.

(b) state the payment date.

(c) state whether the payoff is a payment by or to the company.

[6]

(iv) Outline two instruments that are equivalent to the final caplet of the contract.

[3]

[Total 16]

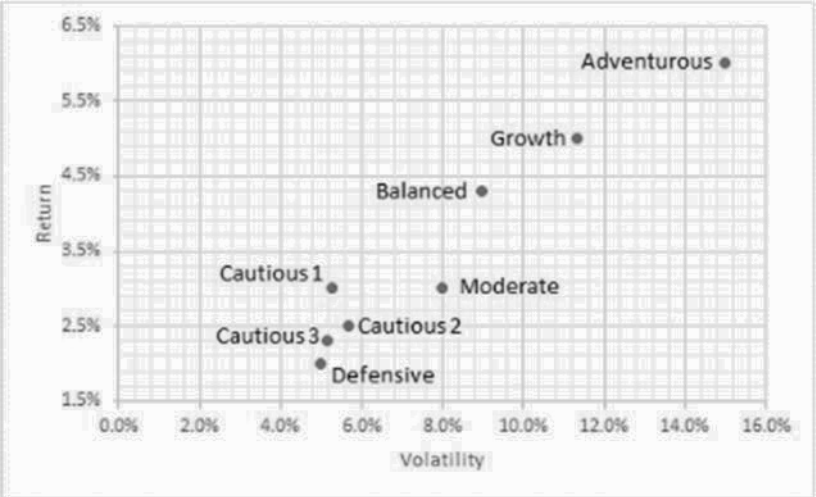
3 An investment manager is designing products for retail investors based on risk budgeting.

(i) Describe the risk budgeting process. [3]

The investment manager has developed the following potential strategies to present to a broad range of investors. Three cautious options are being contemplated before a final decision is made to select one of them. The forecast risk and return metrics that have been determined by the investment manager are set out in the table below:

	Cautious 1 (%)	*Cautious 2 (%)*	*Cautious 3 (%)*	*Defensive (%)*	*Moderate (%)*	*Balanced (%)*	*Growth (%)*	*Adventurous (%)*
Government securities	60	50	70	100	0	20	10	0
Corporate bonds	20	50	30	0	100	30	20	0
Equities	20	0	0	0	0	50	70	100
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Expected volatility	5.3	5.7	5.1	5	8	9	11.3	15
Expected return	3	2.5	2.3	2	3	4.3	5	6

The following chart shows the risk and return metrics graphically:



(ii) Comment on the positions of the modelled portfolios relative to one another in the above chart, paying particular attention to the positions of the cautious options relative to each other as well as the other portfolios. [6]

(iii) Assuming the investment manager has now selected one of the cautious options:

(a) describe how an investor may use the information presented.

(b) state, with reasons, what other information the investor should consider in order to decide on their investment strategy.

[7]
[Total 16]

4 A large defined contribution pension scheme offers a range of investment options to the scheme's members. The three current options are a domestic equity fund, a balanced fund (50% domestic equity, 50% domestic government bonds) and a cash fund. The trustees are contemplating introducing new investment options. The options being considered include infrastructure and property.

(i) Describe the main features of infrastructure and property that members of the scheme should consider before investing in these asset classes. [8]

The trustees are investigating whether to offer actively or passively managed versions of the new investment options.

(ii) Compare the main features of active and passive management. [4]

(iii) Discuss the advantages and disadvantages the trustees should consider in deciding which version to implement. [7]
[Total 19]

5 An investor is seeking to maximise their after-tax investment returns.

(i) Discuss the factors that will influence their after-tax investment return. [6]

(ii) Suggest possible actions the investor could take to maximise their after-tax investment return. [6]
[Total 12]

6 (i) Suggest possible ways that national governments can protect consumers who are invested in private defined contribution pension schemes [2]

A government wants to encourage its citizens to save for their retirement and is planning to introduce a series of ethical funds that will be managed by third-party providers.

(ii) Outline the operational checks the government should perform on the third-party providers before letting them manage any of the funds. [4]

(iii) Describe the key investment features that the government should include in the investment management agreement that the third-party providers will be given. [5]

[Total 11]

7 (i) Describe the qualitative and quantitative factors the following types of fund managers would focus on when evaluating a stock:

(a) A growth fund manager

(b) A value fund manager.

[4]

(ii) State what the term 'a rotational fund manager' means. [1]

The annual investment returns of four funds, A, B, C and D, and the market index are given in the table below:

	Year (% p.a.)			
	1	*2*	*3*	*4*
A	6	3	1	−6
B	−2	−2	0	8
C	3	0	0	1
D	−5	−3	−1	15
Index	5	2	1	−4

(iii) Calculate the relative annualised return over the 4 years for each fund against that of the index. [2]

(iv) State, with reasons, which investment style each of the fund managers may have adopted. [4]

[Total 11]

END OF PAPER