INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

21 September 2023 (am)

Subject CB1 – Business Finance
Core 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 A project has an internal rate of return (IRR) of 18%. The required rate of return is 12%. Which of the following statements is correct?

A The IRR criterion yields an absolute measure of project performance.
B The project has a negative net present value (NPV).
C The project's acceptance will increase shareholder wealth.
D The project's NPV is required before making any decision.

[2]

2 A limited liability partnership (LLP) is facing bankruptcy because its managing partner had recklessly taken a loan to invest in a new IT system for the LLP. The LLP is now struggling to service this loan. The LLP has three other partners who work in client-facing roles and take no active part in the LLP's management. Which of the following statements is correct?

A Creditors have no further rights once the LLP's assets have been exhausted.
B Only the lender who financed the IT system can claim partners' personal assets.
C The four partners are jointly and severally liable for the LLP's debts.
D The LLP's creditors have a strong claim against the managing partner's personal assets.

[2]

3 Company D, based in Country H, paid taxes in Country L of $2 million on the $10 million that it earned from its activities in that country. Company D pays tax of 15% in Country H.

What is the maximum offset that Company D can claim in respect of double taxation relief on taxes incurred in Country L?

A nil
B $0.5 million
C $1.5 million
D $2 million.

[2]

4 Simon has designed a new type of kettle that will enable buyers to boil water very quickly, using very little energy in the process. The kettle will retail for $25. The design work has been completed. Simon requires $100,000 to finance the manufacture of an initial batch of 10,000 kettles.

Which of the following would be the most suitable means of raising this finance?

A Donation-based crowdfunding
B Investment-based crowdfunding
C Loan-based crowdfunding
D Pre-payment crowdfunding.

[2]

5 An airline requires the use of an aircraft for the next 3 years. The aircraft's purchase price is $60 million. H Bank has agreed to lease the aircraft to the airline for 3 years. The airline will have exclusive use of the aircraft for 3 years, after which it will be returned to H Bank. The lease payments have a present value of $20 million.

What type of finance is the airline using?

A Bank loan
B Credit sale
C Finance lease
D Operating lease.

[2]

6 A company's authorised share capital is 500,000,000 $1 shares, of which 300,000,000 have been issued at a premium of $0.10 per share. The issued shares are $0.45 paid.

If the company should fail, what is the maximum amount that the company's lenders could claim directly from its shareholders?

A nil
B $165 million
C $195 million
D $275 million.

[2]

7 Company V is a quoted jewellery retailer. The company is evaluating an opportunity to invest in the manufacture and sale of luxury clothes that will carry the Company V brand name and logo. Which of the following beta coefficients would be the most appropriate basis to determine the required rate of return on this investment?

A Company V's beta coefficient.
B The average beta coefficient for all quoted companies in Company V's home country.
C The average beta coefficient for luxury retailers.
D The beta coefficient of Company B, a luxury clothing retailer.

[2]

8 Company E's ungeared beta is 1.2. The company's debt is $4 million, and equity is $8 million. The tax rate is 20%. What is Company E's geared beta?

A 1.35
B 1.5
C 1.65
D 1.8.

[2]

9 A parent company has a 100% owned subsidiary and a 90% owned subsidiary. The three companies have property, plant and equipment with book values of $100, $250 and $300 respectively. What value will be attributed to property, plant and equipment in the consolidated financial statements?

A $100
B $350
C $620
D $650.

[2]

10 A company has revalued its non-current assets during the year. Where will the gain on revaluation appear in the company's financial statements?

A Statement of changes in equity, statement of comprehensive income and statement of financial position.
B Statement of changes in equity, statement of financial position and statement of profit or loss.
C Statement of changes in equity, statement of comprehensive income and statement of profit or loss.
D Statement of comprehensive income, statement of financial position and statement of profit or loss.

[2]

11 Discuss why the nature of the business undertaken by insurance companies can complicate the reporting of profit in their financial statements. [5]

12 F is a holiday company that owns hotels in various holiday locations and uses its own aircraft to operate flights to and from those locations. F has won several prestigious awards for the high quality of its sustainability reporting.

Explain how F may benefit from the voluntary disclosure of its environmental impact.

[5]

13 Company Z is a quoted company that saw its share price fall after the announcement of each of the last two major investment projects. As a result, Company Z's directors are considering adopting the shareholder value approach to evaluating future projects.

Explain the potential advantages of the shareholder value approach to Company Z.

[5]

14 Company C is a leisure company that owns and operates three theme parks in its home country. The parks are labour-intensive and cost a great deal to operate. Many of the parks' visitors are tourists from Country R, although the numbers visiting are affected by exchange rates. Country R's currency is volatile and when the currency is weak it is more expensive to travel abroad. Therefore Company C's Board is considering developing a theme park in Country R.

Describe the approach that Company C's Board could take to applying Monte Carlo simulation to the evaluation of the construction of a theme park in Country R. [5]

15 An actuarial consulting firm, X, wishes to expand rapidly and is considering the acquisition of a slightly smaller actuarial consulting firm, Y, in order to do so.

Explain the issues that should be considered with respect to the target firm before proceeding with the acquisition. [5]

16 Explain the purpose of the Stock Exchange rule that requires companies to offer new shares to existing shareholders. [5]

17 Company W is a quoted company. Company W's Board has offered shareholders a scrip dividend as an alternative to a cash dividend.

Explain how Company W's shareholders should decide whether to accept the scrip as an alternative to cash. [5]

18 Company Y wishes to build a windfarm in a location that is ideally suited to the generation of electricity using wind power. The proposed development will generate a substantial positive NPV. Unfortunately, the windfarm will also interfere with the migration patterns of birds including some rare species.

Describe the ethical implications of proceeding with this development. [5]

19 The following information has been extracted from Q's financial statements as published during the last 6 years to 31 March:

	2018	*2019*	*2020*	*2021*	*2022*	*2023*	*Average for 2018–2023*
	($000)	*($000)*	*($000)*	*($000)*	*($000)*	*($000)*	*($000)*
Profit/(loss) for the year	1,900	1,600	1,300	(200)	(400)	(900)	550
Equity	15,480	16,760	17,800	17,600	17,200	16,300	16,857
Loans	6,000	8,000	8,000	11,000	11,000	12,000	9,333
Interest (included in calculation of profit for the year)	840	1,120	1,120	1,540	1,540	1,680	1,307

	%	*%*	*%*	*%*	*%*
Return on equity	12.3	9.5	7.3	(1.1)	(2.3)
Return on capital employed	12.8	11.0	9.4	4.7	4.0
Gearing	27.9	32.3	31.0	38.5	39.0

(i) Calculate Q's return on equity, return on capital employed, and gearing for:

- 2023
- average for 2018 to 2023.

[6]

(ii) Evaluate Q's performance over the period from 2018 to 2023 and explain how this pattern of results may have arisen. [10]

(iii) Explain why Q's pattern of performance makes it important for the directors to keep the company's gearing ratio under review. [4]

[Total 20]

20 Company K is a quoted chemical manufacturing company that complies with the UK Corporate Governance Code. Company K has four executive directors: the Chief Executive, the Finance Director, the Marketing Director and the Production Director. The executive directors have a collective responsibility for Company K's strategic management.

The executive directors are remunerated by a combination of salaries, profit-related bonuses and shares in Company K.

Company K also has four non-executive directors: the Chair and three independent non-executives. The Chair convenes Board meetings and the other three participate in all Board meetings. The non-executives have a collective responsibility for oversight of all governance matters including liaison between the Board and external auditors, and setting the executive directors' remuneration including deciding on salaries, bonuses and share allocations.

Company K's non-executive directors have all previously held senior positions in business or government. They are paid fixed salaries for their participation on Company K's Board, with no adjustments for the company's performance.

(i) Discuss the agency implications of having Company K's Board comprise equal numbers of executive and non-executive directors. [7]

(ii) Evaluate the difficulties associated with setting remuneration for executive directors in a manner that supports Company K's strategy and promotes its long-term success. [7]

(iii) Discuss the implications for the independence of the external audit of having liaison meetings between Company K's non-executive directors and the auditor. [6]

[Total 20]

END OF PAPER