INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

23 September 2024 (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.

1 Which of the following explains why the directors of a quoted company would be keen to discourage a takeover bid by a rival company?

A Consumers will have fewer choices if the acquisition proceeds.
B The bid implies that the target's directors are underperforming.
C Bidders always attempt to underpay the shareholders.
D The target's share price is likely to be depressed by the bid.

[2]

2 How should the potential conflict between the board's duty to maximise shareholder wealth and its ethical duty to other stakeholders be addressed?

A Ethical duties always take priority over the maximisation of shareholder wealth.
B Shareholder wealth should always be maximised regardless of other impacts.
C The board is required to seek the shareholders' guidance with respect to ethical duties.
D The pursuit of shareholder wealth may be constrained by ethical duties.

[2]

3 Who bears the responsibility for financial decisions made by a quoted company?

A The board of directors.
B The chief financial officer.
C The external auditor.
D The shareholders.

[2]

4 A company has offered its shareholders the option to take a scrip dividend as an alternative to a cash dividend. What are the implications of accepting this option?

A A scrip dividend is identical to a share repurchase.
B Accepting the scrip dividend will reduce the shareholders' wealth.
C Shareholders can avoid tax by accepting the scrip dividend.
D The share price will be affected by the numbers who accept the scrip.

[2]

5 Which of the following explains the difference between real and nominal interest rates?

A Nominal rates are equal to the coupon rate on gilts.
B Nominal rates are equal to the returns from index linked gilts.
C Real rates are adjusted for the effects of inflation.
D Real rates are higher than nominal rates.

[2]

6 A company's directors are considering an investment in a major project. The following criteria for the investment are under consideration:

- The project will be funded using debt that will have a 10% post-tax rate of interest.
- The project's internal rate of return is 9%. The company has a standard hurdle rate of 12%.
- The project's estimated beta coefficient indicates that the required rate of return is 14%.
- The company's historical weighted average cost of capital is 16%.

What is the lowest rate of return that the company can accept in order to maintain shareholders' wealth?

A 10%
B 12%
C 14%
D 16%

[2]

7 Which of the following is a practical advantage of using simulation in determining the risk associated with a major project?

A Simulation is a quick and easy technique to apply.
B Simulation is an objective approach to project evaluation.
C Simulation provides the correct answer concerning investment.
D Simulation takes account of the interactions between risk factors.

[2]

8 Company R's directors are planning to extend their factory. There is a risk that the site on which the extension will be built is structurally unsound. If it is, then the cost of building the extension will increase.

Company R's board is considering addressing the risk by asking a building company to agree to build the extension for a fixed price. Which of the following is the most likely outcome of this approach?

A The building company will accept the risk of problems with the site.
B The building company will charge more to compensate for the risk.
C The building company will insist on building the extension elsewhere.
D The building company will seek damages from Company R if the site is unsound.

[2]

9 A company is evaluating an investment and has forecast future cash flows. The board wishes to evaluate the project's cash flows on the basis of certainty equivalents.

Which of the following is true of the determination of certainty equivalents?

A Certainty equivalents will be higher than forecast net cash inflows.
B Certainty equivalents will be lower than forecast net cash inflows.
C Certainty equivalents will be more objective than forecast cash flows.
D Certainty equivalents will not require to be discounted.

[2]

10 A quoted company has a highly skilled workforce. The value of that workforce is not reflected anywhere in the company's financial statements. Which of the following explains why that should be?

A Any amount attributed to the workforce would have to be written off over time.
B The value of the workforce will never be material.
C The affairs of the business are kept separate from those of its employees.
D The value of the workforce cannot be measured objectively in money terms.

[2]

11 A quoted company's chair has retired from office. The company's nomination committee is considering appointing the chief executive to act as chair in addition to continuing as chief executive.

Recommend, with reasons, if it would be desirable for the same person to act as both chief executive and chair. [5]

12 A recently established partnership trades as a retailer. The business wishes to arrange trade credit in order to fund the purchase of inventory.

Explain the features of trade credit that may make it difficult for the partnership to obtain funding from this source. [5]

13 Countries adopt a variety of different approaches to protect individuals when levying tax.

Explain two of the ways in which countries can do this. [5]

14 The directors of a quoted company are considering issuing preference shares to fund a risky investment project.

Explain the potential disadvantages of issuing preference shares. [5]

15 The founders of an unquoted company are seeking equity finance to fund rapid growth. A venture capitalist (VC) has offered to provide the required finance as long as the company can demonstrate that it can obtain a quotation within 6 years.

Explain why the VC would require the company to seek a quotation within that timeframe. [5]

16 A quoted electronics manufacturer specialises in inexpensive consumer electronic products, such as headphones and speakers. The company's board is considering expanding the product range to include televisions. This will require a substantial investment.

Recommend, with reasons, how the board may determine an appropriate cost of capital for the proposed investment. [5]

17 A company has a large balance on its revaluation reserve.

Explain how such a balance could have arisen. [5]

18 Company U owns 10% of Company X's equity. Company U also holds a contract that grants it the right to remove and replace Company X's directors and to compel Company X's board to vote in accordance with Company U's instructions.

Recommend, with reasons, if Company X should be accounted for as a subsidiary of the U Group. [5]

19 Company W and Company P are both major retailers who are in direct competition with one another. Both companies make sales through traditional shops and online through their websites. The information provided below was extracted from the companies' latest financial statements:

Statements of profit or loss
For the year ended 30 June 2024

	W	P
	$m	$m
Revenue	400	600
Cost of sales	(128)	(228)
Gross profit	272	372
Other operating costs	(40)	(42)
Operating profit	232	330
Interest	(32)	(28)
	200	302
Tax	(44)	(66)
Profit for the year	156	236

Statements of financial position
As at 30 June 2024

	W	P
	$m	$m
Property, plant and equipment	1,232	1,357
Inventory	9	12
Bank	11	7
	20	19
	1,252	1,376
Equity	800	900
Loans	400	400
Trade payables	8	10
Tax	44	66
	52	76
	1,252	1,376

	W	P
Return on capital employed	19%	25%
Gross profit %	68%	62%
Inventory turnover	26 days	19 days

(i) Compare the performance of Company W and Company P, explaining which of the two companies appears to be more successful. [10]

(ii) Evaluate the difficulties of comparing the performances of Company W and Company P from the above information. [6]

(iii) Explain the implications of the two companies having current liabilities that exceed their current assets. [4]

[Total 20]

20 Company M is a multinational insurance company that specialises in car insurance. It has extensive operations in several European and Asian countries. Company M also has a subsidiary in North America that has consistently generated 3% of Company M's profits since it was purchased for $300 million in 2015.

Company M's board is considering selling the North American subsidiary. It has held confidential discussions with a North American insurance company that is prepared to offer $260 million for the subsidiary.

(i) Evaluate Company M's proposal for divestment from its North American subsidiary. [7]

(ii) Discuss the agency concerns that may be raised by Company M's shareholders if the board accepts the buyer's offer of $260 million. [7]

(iii) Outline the arguments for and against using the $260 million raised from the divestment of the North American subsidiary to repay some of Company M's borrowings. [6]

[Total 20]

END OF PAPER

EXAMINERS' REPORT

CB1- Business Finance

Core Principles

September 2024

Introduction

The Examiners' Report is written by the Chief Examiner with the aim of helping candidates, both those who are sitting the examination for the first time and using past papers as a revision aid and also those who have previously failed the subject.

The Examiners are charged by Council with examining the published syllabus. The Examiners have access to the Core Reading, which is designed to interpret the syllabus, and will generally base questions around it but are not required to examine the content of Core Reading specifically or exclusively.

For numerical questions the Examiners' preferred approach to the solution is reproduced in this report; other valid approaches are given appropriate credit. For essay-style questions, particularly the open-ended questions in the later subjects, the report may contain more points than the Examiners will expect from a solution that scores full marks.

For some candidates, this may be their first attempt at answering an examination using open books and online. The Examiners expect all candidates to have a good level of knowledge and understanding of the topics and therefore candidates should not be overly dependent on open book materials. In our experience, candidates that spend too long researching answers in their materials will not be successful either because of time management issues or because they do not properly answer the questions.

Many candidates rely on past exam papers and examiner reports. Great caution must be exercised in doing so because each exam question is unique. As with all professional examinations, it is insufficient to repeat points of principle, formula or other text book works. The examinations are designed to test "higher order" thinking including candidates' ability to apply their knowledge to the facts presented in detail, synthesise and analyse their findings, and present conclusions or advice. Successful candidates concentrate on answering the questions asked rather than repeating their knowledge without application.

Candidates should note that from the April 2025 exam session, all examinations will continue to be delivered virtually and will have online proctoring. Exams will be closed book and closed web. The ability to refer to past examiner reports and past papers during the exam is not permitted. Candidates attempting to do so will be in breach of the Assessment Regulations and subject to inappropriate conduct investigations. Further details of the new exams can be found on the IFOA website.

The report is written based on the legislative and regulatory context pertaining to the date that the examination was set. Candidates should take into account the possibility that circumstances may have changed if using these reports for revision.

Sarah Hutchinson
Chair of the Board of Examiners
December 2024

General comments on the *aims of this subject and how it is marked*

The Finance and Financial Reporting subject aims to provide a basic understanding of corporate finance including a knowledge of the instruments used by companies to raise finance and manage financial risk and to provide the ability to interpret the accounts and financial statements of companies and financial institutions.

This paper examines basic finance including raising funds by a variety of methods, taxation, basic management accounting, net present value and project appraisal and other topics, it has both calculations and essay type questions on these topics. The paper also examines financial reporting including preparation of the main financial statements and interpretation of financial statements. It also considers the basis of the preparation of statements and the information needs of a variety of end users of financial statements.

Different numerical answers may be obtained to those shown in these solutions depending on whether figures obtained from tables or from calculators are used in the calculations, but candidates are not penalised for this.

Comments on *candidate performance in this diet of the examination*

Many candidates performed well in this exam. The MCQs were answered very well with more candidates gaining high marks than the previous few diets. The short response questions were mostly answered very well, question 18 was the poorest performing question. Performance in question 20 was better than in past diets.

The area in which candidates' performance was weakest was finance, this is often the case with this exam. Candidates should ensure a sound knowledge of finance and be able to apply their knowledge to scenarios.

Candidates were good at questions which mainly tested knowledge but were a little weak on the application of knowledge to scenarios. The pass mark was set at 63 as several questions, including MCQs could be answered using core reading alone and candidates scored very highly on those questions.

Pass Mark

The Pass Mark for this exam was 63.
1337 presented themselves and 819 passed.

Solutions for Subject CB1 - September 2024

Q1	B	[2]
Q2	D	[2]
Q3	A	[2]
Q4	D	[2]
Q5	C	[2]
Q6	C	[2]
Q7	D	[2]
Q8	B	[2]
Q9	B	[2]
Q10	D	[2]
		[Total 20]

Commentary:
There were some excellent results for Q1-10. Many candidates scored 18-20 marks. The marks which were not gained tended to be Q6.

Q11

It could be argued that it is preferable to have different people in each of these roles.

The role of the CEO is usually associated with leadership for the company as a whole, while the chair is responsible for leadership of the board. [1]

Keeping both roles separate enables the chair to monitor the actions of the executive board as a whole and the CEO as an individual. [1]

From a governance point of view, that independence might reassure the shareholders that the board is being adequately supervised. [1]

Having one person fulfil both roles could lead to a loss of trust and/or confidence in the company's senior management, which could have an impact on the share price. [1]

The fact that the departing chair is retiring could suggest that it is time for a new appointment to review the company's operations from a fresh perspective. [1]

[Total 5]

Commentary:
This question was answered reasonably well by many candidates. Few candidates mentioned the departing chair and any possible changes as a resulting from that. Many candidates still performed well in this question.

Q12

The providers of trade credit are effectively making unsecured loans to their customers, which can make them reluctant to advance finance on this basis. [1]

If the business fails then the suppliers may be ranked behind secured creditors before they can recover any of the amounts that they are owed. [1]

If payments are late or trade customers default then they may find it difficult to force prompt payment, despite the impact on cash flows. [1]

The partnership is a new business that does not have an established track record, so potential suppliers have no credit history that can be analysed to evaluate the risks of providing trade credit. [1]

Suppliers can seek payment from the partners' personal resources, but that may not prove satisfactory because the partners may have invested their personal wealth in establishing the business. [1]

[Total 5]

Commentary:
Some *candidates discussed trade credit without mentioning the problems of obtaining trade credit as a new business.*

Q13

Tax is generally based on cash flows, which enables taxpayers to determine their tax liabilities accurately and in an objective manner. [1]

It also means that cash should be available to settle the tax liability. [1]

For example, capital gains are taxed after the gain has been realised, normally when an asset is disposed of. The proceeds of disposal are then known and the taxpayer can budget for the tax bill from those proceeds. [1]

Tax systems also tend to make tax charges progressive, with little or no tax charged on low incomes or capital and progressively higher proportions taken as incomes or gains increase. [1]

For example, income tax often permits taxpayers a personal allowance which means that no tax is charged on incomes below that amount, which ensures that low-paid workers are not taxed to the extent that they have insufficient post-tax income. [1]

[Total 5]

Commentary:
This question was answered well with many candidates displaying a good understanding of taxation. Most candidates were able to discuss and give good examples from a variety of tax regimes.

Q14

Preference shares are a relatively expensive source of finance, which makes debt a much cheaper source of finance. Preference shareholders could potentially lose their investment in the event that the company fails because all lenders must be paid in full before any amount is payable to the preference shareholders. [1]

Companies will have to pay a higher rate of preference dividend than they would interest on loans in order to compensate preference shareholders for this increased risk. [1]

Companies cannot claim any tax relief on preference dividends, which is a further reason to regard these shares as more expensive than debt. [1]

Preference shares also lack the flexibility of equity because dividends are fixed and there may be penalties associated with leaving a dividend in arrears. [1]

That means that preference shares have to be treated as debt for the purpose of calculating gearing, which makes the entity appear to be more risky for equity shareholders. [1]

[Total 5]

Commentary:
This question was answered well. Many answers were clearly answered using the study text. Few candidates mentioned the point about possible penalties for being in arrears with dividends.

Q15

VC investors specialise in providing initial funding to new businesses. They tend to buy equity in response to the risk associated with supporting these ventures. [1]

Their business logic is that an equity stake in a new venture will appreciate at a significant rate if the venture turns out to be successful. [1]

The only way to realise that appreciation is to sell the shares, which will be much easier to do if the company is listed as soon as possible after the initial growth phase. [1]

If the company is quoted then it will be possible to release the VC's equity as a cash sum that can be invested in a fresh business venture. [1]

The only alternative would be for the VC to seek a buyer for an unquoted investment, but that would be a difficult and time consuming process and would probably realise less than the true value of the equity. [1]

[Total 5]

Commentary:
Some candidates just stated what a VC was rather than why they would seek a quotation on the stock exchange. Apart from this, candidates did make good points.

Q16

One approach would be to identify a quoted company that manufactures televisions or similar products and aims for the same market segment as the company's new product range. [1]

The quoted company's beta coefficient should be obtained, based on historical data. [1]

The beta coefficient should be adjusted to remove the effects of gearing that are implicit in the figure. [1]

The ungeared beta could then be used to calculate the required rate of return on the equity invested in this formula, using the formula $r_f + ß(r_m - r_f)$. [1]

This rate would reflect the risk being borne by the shareholders, assuming that they hold their investment in the company within diversified portfolios. [1]

[Total 5]

Commentary:
This question was on finance which is often answered badly by candidates. *A few candidates mentioned that the company was moving into a different business. Many discussed betas but few discussed ungeared betas and risk so marks were a little lower for this question.*

Q17

The revaluation reserve has arisen because the fair value of the property, plant and equipment on the open market exceeds their net book value. [1]

That could have arisen in two ways. Firstly, the assets might have appreciated in value during their period of ownership. [1]

In that case, it would still be appropriate to charge depreciation and so the fair value could exceed the net book value. [1]

Secondly, it is possible that the assets are being depreciated using the reducing balance method at a very rapid rate. [1]

In that case, it would be possible for the company's assets to be depreciated at an excessive rate when they are new and, for a period, for their book values to be lower than their fair values. [1]

In either case, if the fair value is reflected in the financial statements then there will be a balance on the revaluation reserve.

[Total 5]

Commentary:
Many candidates had enough knowledge to gain three marks but few knew enough to gain a higher mark. Many answers were just repeating the study text. Few candidates mentioned depreciation in their answers.

Q18

X should be accounted for as a subsidiary if it is controlled by U. [1]

The 10% shareholding is insufficient to grant control, so that is effectively irrelevant. [1]

The fact that U controls X's Board is sufficient to make it a subsidiary. [1]

U can effectively set X's strategy and can make it operate in a manner that suits U's interests. [1]

That control may be slightly constrained by the fact that X's shareholders may be able to prevent U from making decisions that are harmful to their interests. [1]

[Total 5]

Commentary:
This question was answered reasonably well when candidates attempted it. Some candidates missed this question out. Most candidates discussed the criteria for a subsidiary and that 10% was not enough for control. Many candidates discussed the other factors that suggested there was control which was good.

Q19

(i)

P is more profitable than W, with higher revenue and greater profit in absolute terms. [1]

More importantly, P has a higher return on capital employed, which indicates that the company is generating more profit in relation to the funds invested by the shareholders and lenders. [1]

The higher ROCE suggests that P is more effective as a business. [1]

W has a higher gross profit % than P, which could imply that it is making greater profit from every £1 of sales. [1]

The fact that the two companies are direct rivals indicates that the gross profit % figures are comparable. [1]

In this case, it seems likely that P has a policy of selling goods at lower selling prices in order to generate greater overall profits. [1]

P is turning inventory over more quickly than W, which suggests that customers are more willing to buy from P. [1]

P generates 1,357/600 = £2.26 from every £1 of property, plant and equipment while W generates 1,232/400 = £3.08. That suggests that W is more efficient in its management of PPE, despite having poorer performance overall. [1]

P appears to be much more efficient in terms of other operating costs, such as administration and marketing. [1]

P spends only 42/600 = 7% of revenue on those costs, while W spends 40/400 = 10% [1]

[Total 10]

(ii)

One concern is that the two companies could have different levels of reliance on online retail. [1]

W's more efficient use of PPE could indicate that it makes a larger proportion of its sales online and so does not require as many traditional brick and mortar shops. [1]

In the short term, establishing an efficient online presence could have made W less efficient than P, but there could be a longer term advantage in terms of the two approaches to retail and so W could become the more profitable company as it becomes more established. [1]

The fact that P is 50% larger than W in terms of revenue could create a false sense that it is the more efficient company. [1]

P could benefit from economies of scale, which would create a false impression that it is more efficient than W **[1]**. [1]

It may be that W will compete effectively despite the disadvantage of being a smaller company and will prove to be better managed in the long term [1]

[Total 6]

(iii)

The fact that the two companies are retailers will have a significant impact on cash flows because sales will result in immediate payment. [1]

Neither company has trade receivables, so a sale results in an immediate inflow of cash. [1]

Goods are purchased on trade credit, with payments due after 8/128x365 = 23 days for W and 10/228x365 = 16 days for P. [1]

There is also the fact that the bulk of the current liabilities are payable to the tax authorities. It is unlikely that the tax will be payable until several months have passed. There is no need for either company to hold cash in the short term prior to these bills becoming payable. [1]

[Total 4]

[Total 20]

Commentary:
Part I was answered very well by most candidates, it was good to see so many candidates understood what the changes in ratios meant. Part ii was not as good as answers were a little vague, however many candidates produced good answers as to what information could be useful when making a comparison between the two companies. *Part iii was answered reasonably well although few candidates mentioned taxation or current liabilities.*

Q20

(i)

The North American subsidiary is a very small part of the Group. It could simply be a distraction for M's Board. [1]

The fact that the offer for the company suggests that it will be sold at a loss implies that it has not been a successful investment for M. [1]

Selling now could be an opportunity to divest a subsidiary that has already declined in value, and may decline further. [1]

It may make more sense to divest the subsidiary in order to release cash that could be used in a more productive manner elsewhere in Europe or Asia. [1]

It may be that the insurance industry is very different in North America and that M simply does not have the necessary skills or experience to grow there. [1]

There is very little downside to the disposal in terms of equipping competitors. [1]

Geographical distance will mean that a rival insurer who buys this subsidiary will not have any real advantage in terms of brand recognition in Europe or Asia. [1]

[Total 7]

(ii)

The shareholders may be concerned that the loss on disposal of the subsidiary indicates incompetence on the part of M's Board. [1]

One would expect a business to expand and grow in value over time and so making a sale at a loss of $40 million after nine years of ownership might raise concerns about governance. [1]

Presumably, the acquisition of the subsidiary was announced in a positive manner, with the Board presenting this as an opportunity to expand into a major new market. [1]

The shareholders will be unhappy that the Board has failed to maintain the value of their investment, and has failed to deliver growth. [1]

It could be argued that the fact that M's Board is prepared to sell in this situation is a sign of integrity. [1]

From an agency point of view, the Board will not have to disclose the market value of the North American subsidiary if it maintains ownership of it. [1]

The sale creates transparency in relation to the problems with this subsidiary, which could reassure the shareholders to some extent. [1]

[Total 7]

(iii)

It would be unacceptable for M to simply keep such a large cash balance without making some productive use of it. [1]

Settling existing loans will save on future finance costs and so there will be some benefit in terms of future profits. [1]

The repayment will also reduce M's gearing, which will create an opportunity to raise replacement loans in the future if an opportunity becomes available. [1]

It could be argued that using the cash in this way implies a lack of imagination on the part of the Board. [1]

The investment will effectively yield a return equal to M's cost of debt, which is unlikely to be a significant rate. [1]

It would be preferable for M to use the cash to invest in a more profitable venture, such as an expansion of operations in Europe or Asia. [1]

[Total 6]

[Total 20]

Commentary:
This question was on finance which is usually the area of the syllabus which is not answered well by candidates. It is good to be able to report that this question was done well by many candidates. *Part I was done very well by many candidates with the most understanding of why selling the subsidiary was disappointing but probably a reasonable idea. Part ii was also answered quite well by many candidates as was part three where candidates discussed ideas for uses of the extra cash gained by the sale. Most ideas were good and in general, question 20 was answered well.*

[Paper Total 100]

END OF EXAMINERS' REPORT

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