Loughborough University

Management Finance
22CVC035

Semester 2 2023 In-Person Exam Paper

This examination is to take place in-person at a central University venue under exam conditions. The standard length of time for this paper is **2 hours**.

You will not be able to leave the exam hall for the first 30 or final 15 minutes of your exam. Your invigilator will collect your exam paper when you have finished.

Help during the exam

Invigilators are not able to answer queries about the content of your exam paper. Instead, please make a note of your query in your answer script to be considered during the marking process.

If you feel unwell, please raise your hand so that an invigilator can assist you.

You may use a calculator for this exam. It must comply with the University's Calculator Policy for In-Person exams, in particular that it must not be able to transmit or receive information (e.g. mobile devices and smart watches are **not** allowed).

Section A, question 1 is compulsory – you **MUST** answer this question.

Answer **TWO** questions from Section B.

All questions in Section B carry equal marks.

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SECTION A
(ANSWER THIS QUESTION)

Question 1

Nottingham Construction Limited (NCS) is a small company trading as per the table below.

	2020 £'000	2021 £'000
Sales	120	122
Cost of sales	69	76
Salaries	15	16
Electricity	3	3
Goodwill	6	6
Other overheads	2	2
Tax	8	5
Interest	0	1
Provision	(10)	5
Cash in the bank	2	3
Long term loan	3	6
Stock	15	24
Creditors	6	8
Debtors	10	16
Shareholder funds		
Retained earnings	28	32
Offices and plant	70	68

Required:

(a) Draw up two financial statements, one to show the profit and the other to show how the assets and liabilities balance. [8 marks]

(b) Explain the differences between debtor days and creditor days, identifying why these are important for the company. [4 marks]

(c) Calculate the gross profit margin, the operating profit margin and net profit margin for the two years and discuss the meaning of these results. [8 marks]

(d) Calculate the current ratio, the acid test ratio and return on capital employed for the two years and explain the results. [8 marks]

(e) Explain exceptional activities and provisions giving an example of each related to a construction company. [6 marks]

(f) Explain the difference between goodwill, impairment and badwill (negative goodwill), and provide an example of each. [6 marks]

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SECTION B
(ANSWER TWO QUESTIONS)

Question 2

(a) A company intends to use a decision tree to help it choose between three competing design and build projects. For each proposal (labelled A to C in the table below), the scheme development cost, the probability of achieving the profit and the expected profit are provided. The company is a general builder and will employ an architecture firm to develop these project proposals. The initial cost is for the preparation of the proposal and the related documents.

Proposal	Cost £k	Probability of achievement	Profit £k
A **Two warehouses**	100	0.2 0.8	5000 3000
B **Offices and three miles of road**	400	0.1 0.4 0.5	6000 4000 3000
C **Renewable offshore energy wind farm and waste disposal plant**	800	0.5 0.3 0.2	6000 8000 9000

(i) Draw and label clearly a decision tree which shows the Expected Monetary Value (EMV) of each of the three projects. [9 marks]

(ii) Interpret the decision tree you gave in answer to Question 2a(i), giving your opinion of the relative financial merits of the three project designs. [4 marks]

(iii) What other factors could the company take into consideration when deciding which proposal to select? [6 marks]

(b) Identify and discuss non-financial issues that could be considered by the building contractor when deciding on whether to tender for a project. [5 marks]

(c) Explain coherence in the context for the building contractor and discuss why it is important. [3 marks]

(d) Explain why you should undertake a net present value analysis at this stage, rather than relying on the figures in the decision tree. [3 marks]

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Question 3

(a) There are a number of ways of pricing projects. Describe the following and give an example as to when you would use each of them, and the main issue for consideration due to COVID, Brexit and the Russian involvement in Ukraine.

- Top-down
- Bottom-up
- Front-end loading estimating

[9 marks]

(b) You are a construction company and a large national retailer wants you to tender for a warehouse. You visit the client and are asked during the meeting to give an order of costs for a warehouse. Whilst you are reluctant to do this as you want more time, you do not want to upset the client. On what basis or method identified in Question 3(a) would you provide the costs, giving a clear reasoning? [5 marks]

(c) Your company has ventured into off-site manufacturing and have decided to make classrooms for schools and temporary accommodation. Calculate the breakeven number of classrooms that you need to manufacture. Show your answer by producing calculations.

- Fixed costs = £200000
- Selling price = £50000 per unit
- Variable cost = £40000 per unit
- Contribution = £10000 per unit

[4 marks]

(d) Your company is reviewing their finance and want to identify the Weighted Average Cost of Capital (WACC). From the figures below, identify WACC.

The total borrowing is £600k, with 20% on long-term borrowing at a rate of 7% per annum, shareholder fund of 70% at a dividend of 5% per annum and short-term loan of 10% at a rate of 12% per annum. [4 marks]

(e) Your company is considering outsourcing some of their off-site manufacturing. Identify four advantages and four disadvantages of outsourcing. [8 marks]

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Question 4

A project is being monitored using the earned value method, has a budget of £3m and is planned to complete in 12 months. The following table shows the values for BCWS and BCWP at the end of the first few weeks. The ACWP at week twenty is £1.5m. All costs relate to labour only.

Activity	Start at the beginning of week	Duration in weeks	BCWS (£K)	BCWP % complete	ACWP
A	**0**	**4**	**70**	**100**	
B	**0**	**8**	**110**	**100**	
C	**5**	**12**	**300**	**60**	
D	**9**	**8**	**300**	**80**	
E	**17**	**12**	**750**	**40**	
F	**13**	**8**	**400**	**80**	
G	**25**	**12**	**600**	**0 (zero)**	

Required:

(a) Draw an earned value diagram updated to show the position at the end of week twenty. Label your diagram as fully as possible. [7 marks]

(b) Why is it possible for values for BCWS to be available beyond the current date (assumed to be end of twenty weeks) but not values for BCWP and ACWP? [3 marks]

(c) At the end of week twenty, what are the values of the cost variance and schedule variance? Explain the meaning of these values. [4 marks]

(d) At the end of week twenty, what would you estimate the cost at completion and the likely time for completion of the project to be, making two different assumptions about future performance? [5 marks]

(e) What can a project manager deduce about a project in this situation? Explain how this situation may have occurred. Suggest actions that a project manager might take to manage a project in this situation. [6 marks]

(f) What are the advantages and disadvantages of using this method for monitoring a project? [5 marks]

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Question 5

A medium sized building company is looking to expand and grow the business, but is having difficulty in obtaining timber at a reasonable price. They are considering merging with a structural timber firm of a similar size as they consider modular construction to be on the increase.

Required:

(a) Discuss the advantages and disadvantages of merging with another company. [12 marks]

(b) The construction industry is often perceived to be monopolistic although its framework agreements are often considered to create oligopolies with the possibility of collusion. The company is developing and is obtaining more work and due to the size of the company it has been included on a framework agreement. Use Porter's five forces model to show how it is more favourable for a construction contractor to be involved with a framework agreement contract. [10 marks]

(c) Explain how economies of scale could be achieved and what could cause diseconomies of scale. Provide a diagram to show short-term and long-term economies of scale. [8 marks]

G C Dickens