Loughborough University

Management Finance
23CVC035

Semester 2 2024 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.

Present Value Table is provided.

Continues/…

SECTION A
(ANSWER **THIS** QUESTION)

Question 1.

Look at the financial accounts below for the question.

	2022 £m	2023 £m
P&L Account		
Sales	170	180
Cost of sales	120	135
Gross profit	**50**	**45**
Administration and expenses	20	21
Operating profit	**30**	**24**
Interest	1	2
Profit before tax	**29**	**22**
Tax	7	4
Net profit	**22**	**18**

Balance Sheet		
Current Asset		
Cash in the bank	5	3
Debtors	40	46
Stock	15	21
Non-Current assets		
Offices and plant	70	68
Goodwill	6	6
Provision	0	2
Current liabilities		
Creditors	30	35
Bank overdraft	4	0
Noncurrent liabilities		
Long term loan	4	4
Net assets		
Equity		
Shareholder funds	72	72
Share premium	10	11
Retained earnings		

Question 1 continues/…

(a) Calculate the net assets and the retained earnings for both years.

[4 marks]

(b) Explain the term share premium. Explain the possible meaning of the term provision in the table above. Define share option.

[6 marks]

(c) Calculate the gross profit margin, the operating profit margin and net profit margins, and discuss the possible reasons for the differences between each. Calculate the debtor days and creditor days explaining the relevance of these figures.

[12 marks]

(d) Calculate the current ratio, the acid test ratio, balance sheet gearing ratio and explain the results.

[7 marks]

(e) Discuss why a company may have a lower percentage increase in revenue compared to the percentage increase in cost of sales.

[4 marks]

(f) Discuss the possible reaction of the debtors and creditors if the company wanted to reduce the debtor days and increase the creditor days.

[4 marks]

(g) Stock in the construction industry is often different to manufacturing. Identify three possible contributors to stock giving an example of each in the construction accounts for a house builder.

[3 marks]

Continues/…

SECTION B
(ANSWER **TWO** QUESTIONS)

Question 2.

The New Construction Group plc is planning to update its computer systems.

It has identified the most appropriate computer system for its needs which will cost £35m.

The additional cost for system support will be £4m per annum and will be outsourced. An additional £2m training costs will be incurred during the first year.

The introduction of the system will result in the closure of the group's own technical department. This will save £15m per annum but there will be immediate one-off redundancy costs of £5m.

Certain items of office and equipment will then be redundant and will be sold for £3m in year one. The new equipment will have a five-year life and will have no trade in value at the end of this period. The Group's internal rate of return is 18% and discount factor is 11%.

Required

(a) Calculate:

(i) the simple payback period for the project
(ii) the discounted payback period for the project
(iii) the Net Present Value (NPV)
(iv) the internal rate of return

[13 marks]

(b) Discuss the merits and limitations of the techniques used in (a) above.

[6 marks]

(c) Discuss whether the company should go ahead with the project, taking into account non-financial factors, NPV and IRR.

[6 marks]

(d) Coherence is often considered when undertaking project work. Define coherence and identify 4 risks that need to be considered when tendering if coherence is ignored.

[5 marks]

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Question 3.

The Construction Company starts to obtain more work and is considering the vertical integration of a joinery subcontractor who is part of the existing supply chain and for design and build contracts undertaking joint ventures with an architectural firm. As the company is increasing in size the estimating department is struggling and have adopted three different approaches.

(a) Discuss the advantages and disadvantages of vertical integration.

[10 marks]

(b) Discuss the advantages and disadvantages of a ventures.

[10 marks]

(c) Describe the following and give an example as to when you would use each of them.

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

[10 marks]

Question 4.

A project is being monitored using the earned value method, has a budget of £4m 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**	**80**	**100**	
B	**0**	**8**	**120**	**100**	
C	**5**	**12**	**360**	**50**	
D	**9**	**8**	**320**	**60**	
E	**17**	**12**	**720**	**40**	
F	**13**	**8**	**400**	**20**	
G	**25**	**12**	**600**	**0 (zero)**	

Question 4 continues/…

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? The two different assumptions are that only one activity is causing an issue and that there are a number of activities that are causing issues.

[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]

Continues/…

Question 5.

(a) The construction industry is often perceived to be monopolistic although the framework agreements are often considered to create oligopolies with the possibility of collusion. Identify the advantages and disadvantages to the client for each of these market structures.

[10 marks]

(b) A construction company is looking to grow its business and is considering long term loans, discuss the advantages and disadvantages of:

- issuing shares,
- leasing,
- long term loan from the bank
- a government bond.

[8 marks]

Calculate the weighted average cost of capital (£400k) based on the following;

[2 marks]

- Ordinary shares (£200k) at 4%
- Government bond (£100k) at 8%
- Bank loan (£100k) at 13%

(c) Use Porter's five forces to show how the UK construction housing sector works for a national house building developer, and why the house purchaser has to pay the asking price for a property.

[10 marks]

G C Dickens

Continues/…

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PRESENT VALUE TABLE

Present value of \$1, that is $(1+r)^{-n}$ where r = interest rate; n = number of periods until payment or receipt.

Periods (n)	Interest rates (r)									
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909
2	0.980	0.961	0.943	0.925	0.907	0.890	0.873	0.857	0.842	0.826
3	0.971	0.942	0.915	0.889	0.864	0.840	0.816	0.794	0.772	0.751
4	0.961	0.924	0.888	0.855	0.823	0.792	0.763	0.735	0.708	0.683
5	0.951	0.906	0.863	0.822	0.784	0.747	0.713	0.681	0.650	0.621
6	0.942	0.888	0.837	0.790	0.746	0705	0.666	0.630	0.596	0.564
7	0.933	0.871	0.813	0.760	0.711	0.665	0.623	0.583	0.547	0.513
8	0.923	0.853	0.789	0.731	0.677	0.627	0.582	0.540	0.502	0.467
9	0.914	0.837	0.766	0.703	0.645	0.592	0.544	0.500	0.460	0.424
10	0.905	0.820	0.744	0.676	0.614	0.558	0.508	0.463	0.422	0.386
11	0.896	0.804	0.722	0.650	0.585	0.527	0.475	0.429	0.388	0.350
12	0.887	0.788	0.701	0.625	0.557	0.497	0.444	0.397	0.356	0.319
13	0.879	0.773	0.681	0.601	0.530	0.469	0.415	0.368	0.326	0.290
14	0.870	0.758	0.661	0.577	0.505	0.442	0.388	0.340	0.299	0.263
15	0.861	0.743	0.642	0.555	0.481	0.417	0.362	0.315	0.275	0.239
16	0.853	0.728	0.623	0.534	0.458	0.394	0.339	0.292	0.252	0.218
17	0.844	0.714	0.605	0.513	0.436	0.371	0.317	0.270	0.231	0.198
18	0.836	0.700	0.587	0.494	0.416	0.350	0.296	0.250	0.212	0.180
19	0.828	0.686	0.570	0.475	0.396	0.331	0.277	0.232	0.194	0.164
20	0.820	0.673	0.554	0.456	0.377	0.312	0.258	0.215	0.178	0.149

Periods (n)	Interest rates (r)									
	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%
1	0.901	0.893	0.885	0.877	0.870	0.862	0.855	0.847	0.840	0.833
2	0.812	0.797	0.783	0.769	0.756	0.743	0.731	0.718	0.706	0.694
3	0.731	0.712	0.693	0.675	0.658	0.641	0.624	0.609	0.593	0.579
4	0.659	0.636	0.613	0.592	0.572	0.552	0.534	0.516	0.499	0.482
5	0.593	0.567	0.543	0.519	0.497	0.476	0.456	0.437	0.419	0.402
6	0.535	0.507	0.480	0.456	0.432	0.410	0.390	0.370	0.352	0.335
7	0.482	0.452	0.425	0.400	0.376	0.354	0.333	0.314	0.296	0.279
8	0.434	0.404	0.376	0.351	0.327	0.305	0.285	0.266	0.249	0.233
9	0.391	0.361	0.333	0.308	0.284	0.263	0.243	0.225	0.209	0.194
10	0.352	0.322	0.295	0.270	0.247	0.227	0.208	0.191	0.176	0.162
11	0.317	0.287	0.261	0.237	0.215	0.195	0.178	0.162	0.148	0.135
12	0.286	0.257	0.231	0.208	0.187	0.168	0.152	0.137	0.124	0.112
13	0.258	0.229	0.204	0.182	0.163	0.145	0.130	0.116	0.104	0.093
14	0.232	0.205	0.181	0.160	0.141	0.125	0.111	0.099	0.088	0.078
15	0.209	0.183	0.160	0.140	0.123	0.108	0.095	0.084	0.079	0.065
16	0.188	0.163	0.141	0.123	0.107	0.093	0.081	0.071	0.062	0.054
17	0.170	0.146	0.125	0.108	0.093	0.080	0.069	0.060	0.052	0.045
18	0.153	0.130	0.111	0.095	0.081	0.069	0.059	0.051	0.044	0.038
19	0.138	0.116	0.098	0.083	0.070	0.060	0.051	0.043	0.037	0.031
20	0.124	0.104	0.087	0.073	0.061	0.051	0.043	0.037	0.031	0.026