MANAGERIAL FINANCE

PROFESSIONAL LEVEL EXAMINATION

APRIL 2021

NOTES:

Section A – Answer Question 1 and Question 2 and **either** Part A **or** Part B of Question 3.
Section B – Answer Question 4 and **either** Part A **or** Part B of Question 5. Should you provide answers to both Parts A and B in Question 3 and/or Question 5, only the answer(s) to Part A for both of these questions will be marked.

MANAGERIAL FINANCE TABLES ARE PROVIDED

TIME ALLOWED:
3.5 hours, plus 10 minutes to read the paper. This is a closed book examination.

INSTRUCTIONS:
During the reading time, candidates are encouraged to use this time to read each Question carefully. Please note, however, candidates will not be prevented from using this time to start typing notes and solutions.

Marks for each question are shown. The pass mark required is 50% in total over the whole paper.

You are reminded to pay particular attention to your communication skills, and care must be taken regarding the format and literacy of your solutions. The marking system will take into account the content of your answers and the extent to which answers are supported with relevant legislation, case law or examples, where appropriate.

N.B. Please note that the right click function has been disabled during your examination. Should you wish to copy and paste, please use the following shortcuts: Copy (Ctrl + C) and Paste (Ctrl + V).

SECTION A
(Answer Questions 1 and 2 and either Part A OR Part B of Question 3.)

Question 1

D Ltd is in the business of manufacturing electric fold up bicycles, known as the D-E bike. The company was set up by David Donaldson in Ireland five years ago. David was formerly a design engineer for a well-known UK manufacturer of fold up bicycles. The current product offering, the D-E bike had been selling well over the past five years at a price point of €1,000. However, due to the pandemic, sales have decreased in the last year by 50% in comparison to previous years where sales were averaging 800 to 1,000 D-E bike units per year. David is concerned about the downturn in the domestic market and, after conducting market research, he has identified an opportunity in the UK market for manufacturing and selling a new and improved E bike. At present, all E Bikes come with an on board mini electronic device as standard. The new E- bike, to be called D-E Mark 2, will have an in-built artificial intelligence electronic device intended to improve the safety features of the E- bike. David has presented you with his four-year plan and has indicated to you that he has been conservative in his estimates.

You have been provided with the following details relating to this project:

- The research and development division has spent €400,000 on market and technical research, and David with his other Directors are encouraged by the findings. The D-E Mark 2 bike will require investment in new production equipment that is expected to cost €450,000 payable immediately. The sales proceeds of the equipment at the end of its four-year useful life are expected to be €210,000.

- Market research has indicated that 600 units will be sold in Year 1 and Year 2 respectively with a 10% annual increase in both Years 3 and 4.

- The selling price of the new product has been forecasted at €1,400 per unit for the first two years and will increase by 10% in Year 3 of the project. It will remain at the Year 3 price for the remainder of the project. All sales will be on a cash basis.

Variable Manufacturing Costs per unit will be as follows:

	€
Direct Materials	300
Direct Labour	400
Variable Overheads	150

- Total fixed operating costs will be €260,000 per year. This figure includes an allocated annual fixed charge from Head Office amounting to €12,500 per month relating to the overheads and the annual depreciation of the new equipment acquired for this project.

- Depreciation is charged on a straight-line basis over the four-year life and the scrap value of €210,000 is expected to be realised.

- Further research and development costs of €47,000 have been contracted and will be paid for in Year 3.

- Other variable costs have been forecast at €200 per unit for the first two years and will increase by 10% in Year 3 of the project. They will remain at the Year 3 level for the remainder of the project.

- Manufacture of the new product will require the use of existing skilled employees. If the project does not proceed, these skilled employees would work on another project yielding a net contribution of €4,000 per month.

- The product will use type S raw iron material, among other materials. Type S material is in stock, although there is no further use for this material, except for use in the production of the new unit. There are 3,000 kilograms in stock at a cost of €30 per kg. The replacement cost is €25 per kg. If production does not go ahead the existing stock will be sold immediately at €20 per kg.

- The company has an existing brazing machine that will be sold if the project is undertaken. Sales proceeds of €180,000 will be received immediately.

- The market research has identified the opportunity for a new Repairs Maintenance and Improvements (RMI) division for the new export market with contracts from cycling clubs once the project is undertaken. David has agreed a contract rate of €250 per D-E Mark 2 bike for this additional service. The contracts stipulate that all services will be provided on a cash basis. The forecasted service units are as follows:

Year(s)	**Forecasted Service Units for the RMI Division**
1	400
2	400
3	440
4	484

- Implementing the plans to manufacture and sell the D-E Mark 2 product will require the recruitment of a new project manager. A salary of €50,000 per annum will be paid in Year 1, increasing by 10% each year until Year 3 when the salary will stay at the Year 3 level for the remainder of the 4-year project.

- David Donaldson in his most recent statement to his management team, has stated that: “We are hopeful that the new project will satisfy our investment criteria but are mindful that non-financial factors may need to be considered in this stand-alone project”.

- The company’s cost of capital is 10%. The company expects investments to deliver positive pre-tax Net Present Value over the life of the project and a maximum payback period of three years. You may ignore the impact of taxation and foreign exchange rates in your calculations.

REQUIREMENT:

Prepare extracts from a report to the management of D Ltd with the information presented in the following order:

(a) A table showing the results of your calculations and recommendations based on (1) the Payback and (2) NPV methods. *Include any detailed workings as an appendix to your extracts from the report. For the NPV calculation, figures may be rounded to the nearest euro. For the Payback calculation, rounding to two decimal places is required.*

(15 marks)

(b) Examine **five** non- financial factors that should be considered by the company in deciding whether or not to invest in the new D-E Mark 2 project and provide a rationale for the basis of your recommendation to the team.

(10 marks)

[Total: 25 Marks]

Question 2

Financial gearing relates to the proportion of debt and associated risk in the capital structure of a company. There are various theories and models regarding capital structure in addition to practical considerations that influence the levels of financial gearing in a company.

REQUIREMENT:

Discuss the implications of this statement from both theoretical and practical perspectives when applied to a company in a sector of your choice.

[Total: 20 Marks]

Question 3

Answer either Part A OR Part B.

Part (A)

(i) L Ltd

The management of L Ltd is reviewing their working capital management options. The company is currently financing short term needs with an overdraft which has an interest rate of 10% per annum. Despite their credit terms stating settlement is due within 30 days, their customers are taking on average of 60 days to pay. L Ltd have suffered bad debts of €120,000 from credit sales of €21.9 million over the last year. The company is considering two options in order to improve their cash flow.

Option 1 is offering a discount for prompt payment, and Option 2 is factoring.

For Option 1, a discount of 1% will be offered for payment within 30 days. The take-up is expected to be 35 % of the value of their receivables; the remainder will continue to take the current average time. Bad debts are expected to decrease by €40,000 and administration costs to decrease by €30,000 per year.

If the company pursues Option 2 (Factoring), the factoring company will charge an annual fee of 1% of sales. Administration costs are expected to reduce by €90,000 and bad debts by 75%. The factoring company will reduce receivables/debtor days to 30 days and will advance 80% of invoices at an interest rate of 15%.

REQUIREMENT:

Calculate which option will maximise cash flow for L Ltd

(10 marks)

(ii) W Ltd

The CEO of W Ltd has asked you to calculate the Return on Assets (ROA) as it is a key financial indicator of business performance.

You have been supplied with the following information based on the Financial Statements W Ltd:

- The Fixed Assets Turnover equals 8 times
- The Current ratio equals 5:1
- Net Profit Margin equals 4%
- P/E ratio equals 15
- Share Price is €30 per share
- Current Liabilities are €300,000
- Outstanding Shares are 60,000.

REQUIREMENT:

Calculate the Return on Assets for W Ltd

(5 marks)

[Total: 15 Marks]

OR

Part (B)

J Plc

The Finance Director and the CEO of J Plc are considering methods by which the company can raise new equity finance of €5 million. The Finance Director is in favour of a rights issue so that existing shareholders are prioritised while the CEO is interested in other ways to raise the new equity finance. The Finance Director is of the view that the rights issue (a one for three rights issue) should be at a discount of 33 1/3 per cent to the current ordinary share price of €3.

REQUIREMENT:

(a) Discuss the factors that determine whether the actual ex rights share price is the same as the theoretical ex rights price (TERP). You should calculate the TERP to support your answer.

(5 marks)

(b) A feature of rights issues for existing shareholder is that their personal wealth is unchanged as a result of the rights issue. Mr. M is an existing shareholder who owns **9,000 shares** of J Plc**.** Discuss the effects of the proposed rights issue on the personal wealth of Mr. M, illustrating that his personal wealth is unchanged.

(5 marks)

(c) Compare and contrast two other methods of raising equity that will be suitable for J Plc bearing in mind the size of the financing requirement.

(5 marks)

[Total: 15 Marks]

SECTION B
(Answer Question 4 and either Part A OR Part B of Question 5.)

Question 4

The following multiple-choice question contains eight sections, each of which is followed by a choice of answers. Only one of the answers offered is correct. Marks are displayed for each section.

REQUIREMENT:

1. In relation to Working Capital Management (WCM) which of the following statements is correct:

(i) Manufacturing companies that have high degrees of operating gearing tend to have low breakeven points.
(ii) A retail organisation that has a long period of credit from its credit suppliers will tend to have smaller amounts of working capital.
(iii) To evaluate whether to offer settlement discount firms should compare the cost of the discount with the benefit of the increased investment in receivables.

(a) Statements (i) and (ii) only
(b) Statements (i) and (iii) only
(c) Statements (ii) and (iii) only
(d) None of the combinations listed above.

(2 marks)

2. Sixty percent of E Ltd's assets are financed with common equity, which is the only type of equity financing the company has. E Ltd's current ratio is 5:1, the total asset turnover is 4 times, total current assets are €150,000, and its sales are €1,800,000. Using this information, E Ltd's Long Term Liabilities are closest to:

(a) €180,000
(b) €150,000
(c) €90,000
(d) None of the above.

(3 marks)

INFORMATION RELEVANT TO REQUIREMENTS 3 and 4 ONLY

Firm MQ and Firm NP are identical except for their debt-to-total-assets ratios (D/TAs) and interest rates on debt. Each has €200,000 in assets, €40,000 Earnings before Interest and Tax (EBIT), and a 40 percent marginal tax rate. Firm MQ has a D/TAs ratio of 40 percent and pays 7.5 percent interest on its debt, whereas Firm NP has a 60 percent D/TAs ratio and pays 10 percent interest on debt. Each firm has 5,000 shares of common stock outstanding.

3. Using the information provided for Firm MQ, the Return on Equity is closest to:

(a) 17.0%
(b) 21.0%
(c) 11.0%
(d) None of the above.

(3 marks)

4. Using the information provided for Firm NP, the Earnings per Share is closest to:

(a) €2.50
(b) €4.08
(c) €3.36
(d) None of the above.

(3 marks)

5. B Ltd recently declared a 10 percent share dividend. . Prior to the share dividend, the equity section on B Ltd 's Financing Extract of the Statement of Financial Position was:

Share Capital (12,000 shares outstanding, €2 par value)	€24,000
Share Premium Account	€16,000
Retained Earnings	€10,000
Total Shareholders' Equity	€50,000

B Ltd's share currently sells for €5 per share. After the share dividend is initiated, what figure is the Share Premium Account closest to?

(a) €16,000
(b) €12,400
(c) €23,200
(d) None of the above.

(3 marks)

6. M Ltd sells 6,000 electrical machines annually. Each machine costs €2,000 to purchase, inventory carrying costs are 45 percent of the purchase price, and the cost of placing an order with its supplier is €120. Using this information, the Economic Order Quantity (rounded to the nearest unit) is closest to?

(a) 80 units
(b) 40 units
(c) 120 units
(d) None of the above.

(2 marks)

INFORMATION RELEVANT TO REQUIREMENTS 7 and 8 ONLY

You have been provided with the following extracts from the Financial Statements of a large Plc.

		Nominal Value	**Market Value**
Ordinary Shares	€1.6 million	€1	€2.45
5% Preference Shares	€1.0 million	€1	€1.07
Bank Loans (Interest rate of 5.5%)	€2.4 million		
6% Irredeemable Debentures	€4.0 million	100/100	€104/100

Additional Information:

Expected market returns are 10%.
The Company uses treasury bills as a comparator for the risk-free rate which is 1.5%.
The Company's beta is 0.8.
Corporation Tax Rate is 12.5%.
The company uses the Capital Asset Pricing model (CAPM) to calculate the Cost of Equity.

7. Using this information, the Cost of Equity is closest to:

(a) 4%
(b) 10%
(c) 8%
(d) None of the above.

(2 marks)

8. Using this information, the Cost of the Debentures is closest to:

(a) 5%
(b) 8%
(c) 2%
(d) None of the above.

(2 marks)

(TOTAL: 20 Marks)

Question 5

Answer either Part (A) OR Part (B)

Part (A)

F Ltd is in the business of selling barbecue equipment and is dependent upon the summer trade. The company has been experiencing liquidity problems. The directors are keen to buy a new point of sale terminal in June at a cost of €30,000 for the summer trade and have indicated to you that the overdraft has reached its limit of €70,000 at the present time (end of May).

The directors have provided you with the following information that is relevant to the cash budget:

- Sales during May were €100,000, of which €20,000 will be received in cash, €47,000 is expected to be received in June, with the remainder expected in July.
- Total Sales are expected to be: June €90,000; July €110,000; August €140,000.
- Cash Sales are expected to be 20% of total sales each month.
- 30% of the credit sales are expected to be received one month after the date of sale.
- A further 60% of the credit sales will be received two months after the date of sale and the remainder will be collected one month after that.
- The gross profit margin will be 45% of Sales.
- Cost of Sales will consist entirely of direct materials which will be purchased and paid for each month to meet the demand for that month's sales.
- During June, July and August the company will engage in a marketing campaign that will cost 10% of sales each month with payment due each month.
- Other expenses amounting to €6,400 for June and increasing by €2,000 each month will be paid for as incurred.

REQUIREMENT:

(a) Prepare a Cash Budget for each of the months June, July and August to assist with the company's liquidity analysis.

(12 marks)

(b) Identify and briefly discuss **four** ways for the company to improve its liquidity.

(8 marks)

[Total: 20 Marks]

OR

Part (B)

At a recent Board of Directors meeting of T plc, the Operations Manager questioned the role and usefulness of the Treasury Manager. It was noted that the operations department fulfilled a valuable function for the company by ensuring that its high-quality goods and services were produced in an efficient manner. The Operations Manager claimed that it was difficult to see how the Treasury Department was adding value for the company.

REQUIREMENT:

Write a reply to the comments of the Operations Manager outlining the activities of a typical treasury department and explain in detail how these can add value to the company.

[Total: 20 Marks]

END OF PAPER

THE INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS IN IRELAND

MANAGERIAL FINANCE

PROFESSIONAL LEVEL - APRIL 2021

SOLUTION 1

REPORT

TO: Management of D Ltd.
FROM: CPA Financial Consultant

RE: Proposed Investment in New opportunities for the D-E Mark 2

This report presents the results of the investment appraisal of the proposed D-E-Mark 2 project using the NPV and Payback methods.

	Introduction of D-E Mark 2	**Recommendation**
Method		
NPV (in €000s)	€494,347	Accept as positive NPV over life of 4 years
Payback	2.04 Yrs.	Accept proposal as within the minimum payback period of three years.

Recommendation:

On financial criteria alone, we would recommend acceptance of this project as there is a positive NPV of €494,347 coupled with the project having payback of 2.04 years and being within the minimum payback period of three years. NPV as a technique allows for the time value of money and the project risk is reflected in the use of the discount factor of 10% based on the cost of capital that is applied to the relevant cash flows. The NPV method is a valid method for the financial appraisal of projects. The payback method is a useful technique for identifying projects that will generate sufficient net cash flows within a specified time horizon.

Furthermore, non-financial criteria would need to be investigated further – examples of these are set out later

(a)

D Ltd

Key Considerations (given in Question)	
New Bike - Sales Units (Yr. 1)	600
Units- Sales Increase Factor (Start at Yr. 3)	10%
Sales Price (Yr. 1)	€1,400
Sales Price Increase Factor (Yr. 3) - Once off Increase	10%
Direct Materials Cost	€300
Direct Labour Cost	€400
Variable Manufacturing O/ Head Cost	€150
Variable Selling and Distn Costs per Unit	€200
Variable Selling and Distn Costs per unit - Yr. 3	€220
Fixed Assets - Equipment Cost (Yr. 0)	€450,000
Equipment Proceeds - End of Yr. 4	€210,000
Annual Fixed Costs (before Depreciation)	€260,000
Allocated Annual Fixed Charge	€12,500
Monthly Factor for Annualised Fixed Charge	12
Depreciation Factor - Equipment - 4 Yr. Life	25%
Skilled Employees - Contribution (monthly) - Opportunity Cost - Outflow	€4,000
Type S Raw Material - No of Kgs in Stock	3,000
Yr. 0. Sale Proceeds per Kg - Opportunity Cost	€20
Existing Brazing Machine - Sale Proceeds - Yr. 0 - Inflow	€180,000
RMI Contract rate per new Bike - Cash Inflow	€250
New - RMI Sales Units (Yr. 1)	400
Project Manager - Salary - Outflow	€50,000
Salary Increase Factor to Year 3	10%

CASH INFLOWS						
Sales Revenue			**Year 1**	**Year 2**	**Year 3**	**Year 4**
	Sales Units		600	600	660	726
	Sales Price		1,400	1,400	1,540	1,540
	Sales Revenue		840,000	840,000	1,016,400	1,118,040
	RMI units		400	400	440	484
	RMI Price		250	250	250	250
	RMI Revenue		100,000	100,000	110,000	121,000
Total Sales Revenue			940,000	940,000	1,126,400	1,239,040
Total Cash Inflows Yrs 1 - 4			940,000	940,000	1,126,400	1,239,040
CASH OUTFLOWS						
Variable Mnfng Costs		850	510,000	510,000	561,000	617,100
Other Variable Costs		200	120,000	120,000	145,200	159,720
Fixed Costs (Operating) - Relevant from €260,000 annually - see W1 (below)	W1		50,000	50,000	50,000	50,000
Skilled Labour Opportunity Cost - see W2 (below)	W2		48,000	48,000	48,000	48,000
Project Manager - Salary			50,000	55,000	60,500	60,500
Total Cash Outflows			778,000	783,000	864,700	935,320
NET CASH FLOW (E39-E47)			162,000	157,000	261,700	303,720
Calculation of Payback and NPV allowing for Year 0 Cash Situation						
	Yr 0					
New Production Equipment - Outflow Yr 0 and Sale Proceeds Yr 4	€450,000					**€210,000**
Opportunity Cost - Raw Material Type S 3,000 kgs @€20 per kg	€60,000					
Cash Inflow - Yr 0 - Brazing Machine - Proceeds	-€180,000					
Net Cash Flow	€330,000		€162,000	€157,000	€261,700	€513,720
Discount Factor @ 10%	1.00		0.909	0.826	0.751	0.683
NPV	€330,000		€147,258	€129,682	€196,537	€350,871
			€319,000			**€494,347** New NPV
Payback Calculation			-€11,000	0.04		Positive NPV
Payback in Less than 3 Yrs						Accept
2.04 Yrs	Payback					

W1

Relevant Fixed Operating Costs - Annually	
Annual Costs	€260,000
Allocated Annual HQ Charge Deduction	€150,000
Depreciation Deduction	€60,000
Relevant Fixed Operating Costs - Annually	**€50,000**

W2

Skilled Labour Opportunity Cost	
Skilled Employees - Contribution (Monthly) - Opportunity Cost - Outflow	€4,000
Monthly Factor	12
Annual Contribution	**€48,000**

(b) Five Non-Financial Factors

1. **Reliability of the Sales projection**s. In any project that relies on forecasts of customer demand sales projections are usually the key limiting factor. Customers may have indicated in preliminary pre sales research that they will purchase the new D-E Mark 2 bike. There are plenty of possible reasons why sales may not materialise e.g. Customers may view the price point differently than the expectation that the company has. It is evident that these are new customers in a new market that do not have any existing loyalty to D Ltd.

2. **Legal Contracts and need for legal team.** David has identified opportunities in the RMI market. Preliminary Research has been conducted but there is no mention of a legal team from the company having reviewed the Contracts with the cycling clubs.

3. **Staff –** Will they have the skills to adapt to the AI led mini electronic device that will be inbuilt into the new bike and will they require training?

4. **New production machinery –** will training be required – Is this an additional cost that has not been factored into the Project and what of the obsolescence of the production machinery and the realism of the trade in value that has been projected for the end of life at end of year four of €210,000 – will these proceeds be realised?

5. **Purchasing of Machinery in Year 0 – Has D Ltd considered other alternatives –** Leasing, Hire Purchase as possible examples that would not require immediate cash outflows.

6. **Maintenance costs on the new Machine** and obsolescence after four years. Further Maintenance costs that may not have been factored into the Project.

7. **New Market –** If this is the UK – there are **Brexit related considerations** in addition to logistical difficulties of delivering bicycles to end customers and to the cycling clubs.

8. **Cycling clubs –The realism of paying Cash** and having no Credit Sales in the proposal can be questioned further.

9. **Suppliers of Raw materials** (e.g. raw iron for bicycle frames) and **need to guarantee continuity and quality of supplies.**

10. **Staff retention –** key to retain the brazing staff as they are difficult to hire and require training for their skills to be updated.

11. **Key stages in production –** unforeseen bottlenecks with the dependence on the new production equipment. Is the production equipment flexible and multi-functional to enable switching between different production stages? This can be one of the key concerns in the bicycle manufacturing sector.

12. **No mention of the painting stage in the production process –** this can cause bottlenecks and for this reason twinned with operating efficiencies bicycle manufacturers outsource this stage as it is also manually intensive. For example Brompton bicycles that are made in London outsource painting to another company in Merthyr Tydfil, Wales.

13. **Existing premises –** Will it cater for the new orders or will they need to move to a new premises, as evidenced when Brompton bicycles in the fold up bicycle market had to move to a new premises when they expanded production.

Any of these non-financial factors can be selected and expanded upon further. **Further rationale for the positive decision receives support from the following considerations**

Cash Inflows: The cash inflows may even be on the low side as David Donaldson has been conservative in his Sales estimates for a business that is solely based on cash. There are no receivables and hence this has a number of related advantages – low cash conversion cycle where there are no receivables, and payables can be operated with favourable terms as the business has excess cash after the low payback period has been attained.

Sources of Cash – Multiple Opportunities: Additionally, the project does not rely solely on one source of income as David has identified the opportunity of Repairs Maintenance and Improvements (RMI) contracts with cycling clubs and the contracts stipulate that all services will be provided on a cash basis. This cash generating opportunity is attractive and can be further strengthened as numbers using this service are conservative at a very reasonable rate. This provides expansion opportunities with the potential number of cycling clubs in the UK alone. This RMI division has no additional projected costs and is cash generating from early days of the division being created.

Contribution Margin Ratio (CMR): There is a CMR of 25%, with low fixed costs of below €150,000. The figure is €148,000 comprised of relevant fixed costs of €50,000 allied to those of the Project Manager (€50,000 initially) and the opportunity costs of the existing skilled employees of €48,000. The new D-E Mark 2 project, even excluding the RMI division has a low breakeven point of 423 bikes -(Relevant Fixed Costs of €148,000/ Contribution of €350) compared with a low estimate of sales units of 600 in the first year. These figures support David Donaldson's view that it is a stand-alone project. We have also seen that it is cash generative allied to having a low breakeven point that will have the further advantage of a low margin of safety as a cushion in the event of poor trading performance

Cash Outflows and Non-Financial Factors

The cash outflows can be examined and further supporting evidence can be gained from the qualitative factors but the calculations of the cash inflows provide a strong rationale for the basis of the recommendation to accept the project.

The project is recommended as it has positive NPV of €494,347 and payback of 2.04 years that is within the minimum payback period of three years. All the evaluation criteria are met.

(10 marks)

[Total: 25 Marks]

SOLUTION 2

There are many practical perspectives that are relevant. Candidates may select from any of the following:

Characteristics of the business and cash generation capability: Some companies generate consistently large amounts of cash inflows and are therefore seen as being capable of taking on high levels of debt. In contrast, other companies with irregular cash flows that may be received at the end of projects instead of an ongoing basis are not capable of meeting obligations to repay debt on a regular basis. Candidates could contrast a company that has high uncertainty of cash flows (e.g. Mining or Speculative sector) with another company that has more regular cash flows (e.g. Food retail sector)

Degree of operating gearing and relationship with financial gearing: Operating gearing refers to the extent to which the firm's costs are fixed. The profits of firms with high operating gearing, such as car or steel manufacturers, are very sensitive to changes in demand. They have high break-even points (the turnover level at which profits are achieved) but when this level is exceeded a large proportion of any additional sales revenue directly results in higher profits because of the relatively low variable costs. In the case of a food retailer, most of the costs are variable (mainly its purchase of goods for resale), whereas for a steel manufacturer, most of the costs are fixed. Food retailers consequently generally have high debt levels as they have lower breakeven points than steel producers and hence lower margins of safety as a cushion in the event of poor trading performance.
Steel producers, by comparison have higher fixed costs and are very sensitive to changes in demand. Because of these commitments, manufacturers with high degrees of operating gearing tend to have low levels of financial gearing.

Borrowing capacity and financial gearing levels: Candidates can indicate that where the business has assets that do not tend to depreciate e.g. property or where there is an active second hand market these companies are more likely to have higher borrowing capacity than firms that have assets with limited use. From a bank's perspective, when considering the security required for extending a line of credit, the assets that are available as collateral will be examined.

Agency Costs: These are the direct and indirect costs of attempting to ensure that agents act in the best interest of principals as well as the losses resulting from failure to ensure that they act this way. Lenders will require a premium on the debt interest to compensate for the additional cost of monitoring and restrictions in the form of covenants may be built into a lending agreement. Managers do not like restrictions placed on their freedom of action – hence they will be averse to incurring debt and high gearing levels.

Managerial preference for the proportion of debt or equity in the financing structure: Candidates can instance possible motives for managers to increase gearing levels that might include:

(a) Bonuses based on reported earnings per share (EPS)
(b) Negotiations with employees.

Managers often receive bonuses based on EPS. Net income can be increased by taking on debt financed projects that are profitable in the short term but may not increase shareholder wealth in the long run. If these projects were financed by increased equity, the new shares issued would dilute the degree of control of existing shareholders, and would also decrease the reported EPS.

Increased debt can improve the bargaining position of the firm when negotiating wage rates with employees. Low debt encourages employees, through the bargaining power of their Trade Unions or representative bodies to raise wage demands. A company with high cash outflows due to interest payments resulting from debt servicing can use this to point out that they cannot be generous to employee demands for increased wages.

Other Factors – Examples can be:

(a) Financial Slack – Having cash and/or spare debt capacity allows firms to avail of positive net present value projects and opportunities that arise.

(b) Tax Shield – For companies that have taxable profits, one significant advantage of debt finance is that the interest payments are tax deductible.

(c) Signalling Effect - The issue of loan capital can be interpreted as a sign that the directors (and the providers of debt) perceive the company to be in a strong financial position to meet future regular interest and capital repayment obligations.

(d) Control – In spite of the risks arising from increased levels of financial gearing, companies may prefer to finance new projects with debt capital because a fresh issue of equity will reduce the degree of control for existing shareholders.

(e) Interest Rates – The rates of interest attached to loan agreements may deter or encourage firms from taking on increased debt in their capital structure. Currently, interest rates are at historically low levels, but uncertainty regarding future trends in rates and in future economic prospects can have an impact of the financing decisions of companies.

Theoretical Models (Modigliani & Miller, Donaldson – Pecking Order Theory) should be mentioned and blended within the answer for their effect on financial gearing, cost of capital, debt/equity structure and risk and return relationship for sector selected.

[Total: 20 Marks]

SOLUTION 3

(A)

(i)		**€**	**€**
Option 1: Evaluation of Early Payment Discount			
Current Trade Receivables	21.9m *(60/365)		3,600,000
New Level of Trade Rec:			
Taking Discount	21.9m x 35% x (30/365)	630,000	
Not Taking Discount	21.9m x 65% X (60/365)	2,340,000	
			2,970,000
Decrease Trade Rec.			630,000
Finance Saving on Trade Rec.	10% of decrease		63,000
Decrease in Bad Debts			40,000
Savings in Admin Costs			30,000
			133,000
Less: Cost of Discount	21.9m x 35%x 1%		76,650
			56,350

Option 2: Factor's Offer		**€**	**€**
Current Trade Receivables:			3,600,000
Trade Receivables under Factor	21.9m x (30/365)		1,800,000
Reduction in Trade Receivables			1,800,000
Savings			
Interest saving on reduced receivables	10% of reduction	180,000	
Reduction in Bad Debts	120,000 x75%	90,000	
Admin. Savings		90,000	
			360,000
Expenses			
Increased Cost on Advanced receivables	1,800,000*80 %*(15%-10%)	72,000	
Annual fee of Factor	21.9m*1%	219,000	
			291,000
Net Benefit			**69,000**

(10 marks)

(ii)

W Ltd	**Return on Assets**	
Given Information		
P/E Ratio	15	
Share Price	30	
Fixed Asset T/ Over	8	
Current Ratio	5	
Current Liabilities	€300,000	
Net Profit Margin	4%	
Shares Outstanding	60,000	
Supporting Calculations		
ROA	Net Income/ Total Assets	
Net Income	No of Shares x EPS	
P/E Ratio of 15	Price per Share/EPS	
	30/EPS = 15	
EPS 30/15	€2	
No of Shares	60,000	
Net Income	**€120,000**	
Net Profit Margin	Net Income/ Sales	4%
Sales	Sales/ Net FA	Net Income/ 0.04
Sales	3,000,000	
Fixed Asset Turnover	Sales/ Net FA	8
Fixed Assets	**375000**	
Current Ratio	CA/CL	5
	CA/300,000	5
Current Assets	**€1,500,000**	
Total Assets		
FA +CA	€1,875,000	
ROA	Net Income/ Total Assets	
	6.4%	

Return on Assets is 6.4%

(5 marks)

[Total: 15 Marks]

(B)

(a) The main factors determining the actual ex-rights share price are the expectations of shareholders regarding the use of the funds raised and market sentiment regarding the future prospects of the company. The actual ex-rights price and the theoretical ex-rights price are the same only if the market view of the issuing company is unchanged and if the yield on the new funds is identical to the average yield on the issuing company's existing funds. The TERP is €2.75. The value of the TERP lies somewhere between the Market Share Price of €3 and the issue price of €2. The new rights share will have to be issued (in J Plc it is €2) at a price lower than the current market price to attract existing shareholders as there is a risk of the market share price falling in the intervening period between the announcement of the rights issue and the purchasing of the shares. The offer has a minimum open period of 10 working days from the announcement until purchases begin. The market can react differently and companies can find that the ex - rights price falls if the market sentiment is adverse or if the expectations of shareholders are not being fulfilled, especially as the company would not have expected this adverse movement. In the case of J Plc it would fall below the TERP that was calculated of €2.75

(5 marks)

(b) A fundamental feature of Rights Issues for an existing shareholder is that their personal wealth is unchanged as a result of the Rights Issue. Mr M is an existing shareholder who owns 9,000 shares of J Plc. Discuss the effects of the proposed rights issue on the personal wealth of Mr M, illustrating that his personal wealth is unchanged.

Mr M - Personal Wealth Options		
Buy the Shares		
Subscribe to the Rights Issue, buy 3,000 shares		
No of Shares (1 for 3)	3,000	
Current Value of Shares 9,000 x 3		
No of Existing Shares	9,000	
Current Market Price	€3	
Current Value of Shares 9,000 x 3	**€27,000**	
Rights Issue		
No of Allocated Shares 3,000 x 2		
Allocated Shares	3,000	
Cash Subscribed for new Shares	**€6,000**	
Value of 12,000 Shares	**€33,000**	Curr Value + Cash Subscribed
T**otal No of Shares**	**€12,000**	
Another Way of calculating TERP	**Curr. Value/ Total No of Shares**	
	€2.75	
		Value of the Rights for each
Supporting Workings		Ordinary Share
TERP - Issue Price / No of Old Shares		2.75 - 2.00
Value of the Right		€0.75
Sell his Rights		
No of Allocated Shares x Right	€2,250	Cash Proceeds
Counterbalanced by Capital loss		
Curr Market Share Price - TERP X No of Shares	€3- 2.75 x 9000 shares	
	€2,250	Capital Loss
	No Change in Personal Wealth	

(5 marks)

(c) The two methods that are the most suitable for modest funding of this size of €5million are Placing and Public Offer. Students should define placing and public offer, and discuss their relative merits in terms of ownership spread, issue costs, administrative costs and relevance for modest amount of funds required.

It is likely that a placing will be appropriate, as this has the lowest cost and is used for smaller issues.

(5 marks)

[Total: 15 Marks]

SECTION B

(Answer Question 4 and <u>either</u> Part A OR Part B of Question 5.)

SOLUTION 4

Q1 D

Ans is D as Statement (i) is false as companies with high degree of operating gearing tend to have high breakeven points; Statement (ii) is the only true statement; Statement (iii) is false as the cost of the discount should be compared with the benefit of reduced receivables

Q2 B

	E Ltd	**Required**	**Calc of Long Term Liabilities**
Given Information			
% of Assets Financed with Equity	60%		
Current Ratio	5		
Total Assets Turnover	4		
Current Assets	€150,000		
Sales	€1,800,000		
Supporting Calculations			
Current Ratio	CA/CL times	5	
Current Liab	CA/5	€30,000	
Total Assets Turnover	Sales/ TA	€1,800,000	4
	TA		
TA 1,800.000/4	€450,000		
Total Liabilities			
450,000 (1- 0.6)	€180,000		
Long Term Liab = Total Liab - Curr Liab	€150,000		

E Ltd.'s Long Term Liabilities are closest to €150,000 (B)

Q3 A

Calc of EPS and Return on Equity
Firm MQ and Firm NP

Given Information		Firm MQ	Firm NP
Total Assets	€200,000		
Earnings before Int & Tax	€40,000		
Marginal Tax Rate	40%		
Shares Outstanding	5000		
Debt/ Total Assets Ratio		40%	60%
Interest Rate on Debt		7.50%	10%
Supporting Calculations			
		Firm MQ	**Firm NP**
Earnings before Int & Tax		€40,000	€40,000
Interest	W1	€6,000	€12,000
Earnings before Tax		€34,000	€28,000
Tax @ 40%		€13,600	€11,200
Net Income		€20,400	€16,800
EPS = Net Income/ 5,000 Shares			
Return on Equity = Net Income/ Equity			
Debt Amount = Total Assets x Debt/Assets Ratio			
200,000 x 0.4		€80,000	
Equity Amount = Total Assets x Equity/ Total Assets Ratio			
Firm MQ = 200,000 x 60%		€120,000	€80,000
Firm NP = 200,000 X 40%			
Interest = Debt x Debt Cost			
Firm MQ = 80,000 x 7.5%		**€6,000.00**	**€12,000**
Firm NP = 120,000 X 10%			

EPS	Firm MQ	Firm NP	
	€4.08	€3.36	Soln
Return on Equity	Firm MQ		C
	20,400/120,000	17%	

Firm MQ, the Return on Equity is closest to 17.0% (A)

Q4 C

	Firm NP	21%	
	16,800/80,000		
Return on Equity	Firm MQ	17%	Soln (a)
EPS	Firm NP	€3.36	Soln C

Firm NP, the Earnings per Share is closest to: €3.36 (C)

Q5 C

B Ltd

Given Information (Before Dividend)

Share Capital (12,000 shares outstanding, €2 par value)	€24,000
Share Premium Account	€16,000
Retained Earnings	€10,000
Total Shareholders' Equity	€50,000
No of Shares	12,000
Share Dividend	10%
Share Price	€5
Par Value	€2

Given Information (Before Dividend)			**After Dividend - Situation**
Share Capital (12,000 shares outstanding, €2 par value)	€2,400	Addition	€26,400
Share Premium Account	€3,600	Addition	€19,600
Retained Earnings	-€6,000	Reduction	€4,000
Total Shareholders' Equity			€50,000

Supporting Calculations

Share Dividend in shares = 12,000 * 10%	1200	
Value of Share Dividend = 1200 x Share Price of €5	€6,000	Retained Earnings will be reduced by €6,000
Increase in Common Stock = Shares x Par Value	€2,400	
Increase in Share Premium Account = Share Dividend - Increase in Common Stock	€3,600	6000 - 2400

B Ltd The Share Premium Account is closest to €19,600 (C)

Q6 B

	M Ltd	**EOQ Calculation**		
Annual Demand	6,000			
Purchase Price	€2,000			
		3		
Order Cost	€120			
Holding Cost % of Purchase Price	45%			
		Sq RT	2 x D x O /H	
			€1,440,000	
			0	
			€900	1600
		Sq RT		40
				40 units

M Ltd the EOQ (rounded to the nearest unit) is 40 units (B)

Q7 C

	Large Plc	Calc of Equity and Calc of Debt
Risk Free (Rf)	1.5	
Beta	0.8	
Return on Market -Rm	10	
Debt		
6% Irredeemable Debentures	6	
Par Value	€100.00	
Market Value	€104.00	
Tax Rate	12.50%	
Cost of Equity	rf + B (Rm -Rf)	
	6.8	
	1.5	
	8.3	**8.30%**

The cost of Equity is closest to 8% (C)

Q8 A

Cost of Debentures	
Coupon Rate/ Mkt Price	6%
Adjust for Tax for After Tax Cost	5.05%

The Cost of the Debentures is closest to 5% (A).

SOLUTION 5

Answer either Part (A) OR Part (B)

(A) **F Ltd**

W1

		June	July	August
	Total Sales	90,000	110,000	140,000
	CASH INFLOWS			
20%	**Cash Sales (Sales x 20%)**	**18,000**	**22,000**	**28,000**
80%	Credit Sales: (Sales x 80%)	72,000	88,000	112,000
	Inflows from Credit Sales			
30%	Collected + 1 month			
	(Credit Sales x 30%)		21,600	26,400
60%	Collected + 2 months			
	(Credit Sales x 60%)			43,200
	Inflows from May Sales	47,000	33,000	
	Total Inflows from Credit Sales	**47,000**	**54,600**	**69,600**

Cash Budget

	Jan	Feb	Mar
Inflows	**€**	**€**	**€**
Cash Sales	18,000	22,000	28,000
Credit Sales	47,000	54,600	69,600
Total Inflows	**65,000**	**76,600**	**97,600**
Outflows			
Payments for materials			
55% of Sales for each month	49,500	60,500	77,000
Marketing			
10% of Sales for each month	9,000	11,000	14,000
Other Expenses	6,400	8,400	10,400
Total Outflows	**64,900**	**79,900**	**101,400**
Net Cash Flow	100	- 3,300	- 3,800
Opening Balance	-70,000	- 69,900	- 73,200
Closing Balance	**- 69,900**	**- 73,200**	**- 77,000**

(12 marks)

(b) Current situation – Company experiencing liquidity issues – negative closing cash balances for each of the three months of the busy summer period. From a trading perspective, without considering the dependence on the overdraft, the month of July is the only month of the three months that is experiencing positive net cash flow. They cannot afford to buy the new point of sale terminal costing €30,000, even with an overdraft of €70,000. Furthermore this will be a fixed asset and should be financed by Long Term sources instead of an overdraft that is technically repayable on demand and does not conform to the matching principle in Managerial Finance where Long term assets are financed by Long Term monies.

To improve their liquidity position they need to re-examine their cash inflows and their cash outflows

Cash Inflows Suggestions
Can they increase the % allocation to Cash Sales so that it is higher than 20%?

The aging of the receivables needs to be re- examined – the portion of 70% that are paying after one month – can this be increased further so that cash is received earlier.

The portion after two months of 20% - we are now waiting for 60 days or more for cash – can this be increased so that the 3 month portion of 10% (90 day) portion is collected earlier

The inventory that is being held at end May of €70,000 – this represents 70% (approx.) of May Sales and 79% of June Sales. Can this inventory be sold off to realise cash.

Cash Outflows Suggestions
All costs (materials, labour and expenses) are paid for on receipt. These expenses are not being delayed. It would be preferable if they could be delayed from the current month. For example, the materials – credit should be sought from Suppliers so that these outflows can be delayed.

Gross Profit Margin of 20% on sales – hence if Sales are €100,000 – trading expenses (related to purchasing and inventory management) are €80,000. This seems excessive and should be re-examined so that the Gross Profit Margin is higher and these trading expenses reduced.

Negotiating Long Term Loan for the fixed asset of the point of sale terminal and reducing the dependence on the overdraft. Overdraft as a liquidity solution is expensive and should only be used for temporary cash shortages.

(8 marks)

[Total: 20 Marks]

OR

Part (B)

Choose from among the following activities of a typical treasury department as per former Treasurer Christopher Purser describing the purpose of his job (Source Arnold, 2013)

1. Manage the Group's cash and currency flows so as to: (a) Minimise interest paid; (b) Maximise interest earned; and (c) Minimise foreign currency exposure – under the remit of reducing risk .

2. Ensure that sufficient funds are available at acceptable rates to meet the company's cash flow requirements.
3. Control, monitor and report the level of the company's borrowings against available facilities and budgets.

4. Ensure that key financial analysts, fund managers and investor community are aware of the company's financial objectives and performance.

5. Ensure that investors' confidence in the company is enhanced through knowledge of and contact with the CEO and the management team.

Added Value – can take each and indicate value added component or expand upon the component.

Explain how the treasurer might reduce risk for the firm, under the umbrella of risk reduction categories of business and operational risk, interest rate, credit risk and currency risk.

Explain how the treasurer benefits the firm through the investment of temporarily surplus cash and vigilance of market watching role for placing of excess funds on market with differing currencies, maturities (long/medium/short durations) and use of differing interest bearing instruments (deposits/bonds).

[Total: 20 Marks]

END OF PAPER