CPA IRELAND | CERTIFIED PUBLIC ACCOUNTANTS

MANAGERIAL FINANCE

PROFESSIONAL 1 EXAMINATION - AUGUST 2018

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, you must draw a clearly distinguishable line through the answer Part(s) not to be marked. Otherwise, only the first answer(s) to hand for each of these questions will be marked.

MANAGERIAL FINANCE TABLES ARE PROVIDED

TIME ALLOWED:
3 hours, plus 10 minutes to read the paper.

INSTRUCTIONS:
During the reading time you may write notes on the examination paper, but you may not commence writing in your answer book. **Please read each Question carefully.**

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

Start your answer to each question on a new page.

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.

List on the cover of each answer booklet, in the space provided, the number of each question attempted.

NB: PLEASE ENSURE TO ENCLOSE YOUR ANSWER SHEET TO QUESTION 4 IN THE ENVELOPE PROVIDED.

THE INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS IN IRELAND

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Time allowed 3 hours, plus 10 minutes to read the paper.

SECTION A
(Answer Questions 1 and 2 and <u>either</u> Part A <u>or</u> Part B of Question 3)

1. E Limited is considering manufacturing and selling an economy e-reader primarily aimed at commuters enabling them to browse, buy and download books and other digital media at quick download speeds. A firm of management consultants has carried out a feasibility study for the company at a cost of €25,000. This amount is to be paid at the end of Year 1. There would also be two requirements for production machinery:

- Some existing machinery could be modified at a cost of €140,000 to undertake the first stage of production.
- For testing the product, the company already has suitable machinery which is not in use; it has a book value of €80,000. This would be difficult to dismantle and dispose of and its net realisable value is €60,000.

If the project goes ahead, machinery maintenance costs of €10,000 per annum will be incurred; there would be additional working capital requirements of €60,000 at the beginning of the project that would arise. These working capital requirements would be recovered at the end of four years. Initial marketing costs, to be paid for as soon as the project is approved, would be €30,000, and annual marketing costs would be €20,000 per annum for the full four years.

The supplier of the existing machinery has agreed to refund 50% of the total marketing costs. This refund would be given equally in Years 3 & 4 of the project.

The selling price and cost per unit is proposed as follows:

	€	€
Selling Price		50
Direct Materials	10	
Direct Labour	7	
Variable Overheads	12	29
General Fixed Overheads (absorbed)	9	
Bank Interest (absorbed)	2	11
Total		40
Profit		10

Additional Information:

- General fixed overheads do not include the costs of a specialised fabricating machine. These costs are €200,000 (including annual depreciation of €10,000) to be divided over the four-year useful life of the e-reader product. As this machine is a specialised machine the net realisable value is nil.
- The management consultants have suggested that the product would have a four-year life before becoming obsolete and being superseded by next generation devices.
- From market research, E Limited expects the sales price to increase by 10% in each of Years 2 and 3. In Year 4, as the product is reaching the expected end of its life, the sales price will revert to the Year 2 sales price to encourage sales.
- Market research also indicated that Year 1 sales can be forecast at 4,000 units. Sales volumes are likely to increase by 10% respectively in each of Years 2 and 3, but will stay at the Year 3 level in Year 4.

- All variable costs (direct materials, direct labour, and variable overheads) are expected to increase by 5% in Year 2 and remain at Year 2 levels for the remaining life cycle of the product.

The company's cost of capital is 10% per annum. E Limited expects investments to deliver positive pre-tax Net Present Value over the life of the four-year project.

REQUIREMENT:

(a) Calculate the four-year Net Present Value of the investment proposal if discounted at 10% (ignore taxation). Rounding to 2 decimal places may be used.

(14 marks)

(b) The managing director of E Limited has heard of the term 'Capital Rationing' and the two types involved. Explain both types and advise how capital rationing could impact upon the proposal.

(5 marks)

(c) Discuss three non-financial factors to be considered before making a final decision regarding whether or not to invest in the e-reader, and justify a final recommendation on whether or not to proceed with the proposal.

(6 marks)

[Total: 25 Marks]

2. New Company will require €11 million in capital in order to be viable and produce €1 million annual cash flows in perpetuity. The prospective directors suggest that the €11 million is to be raised as a combination of debt and equity. There are three Directors – IT, Sales & Marketing, and Finance. All three Directors are aware of the significance of the cost of capital in the context of the following €11 million funding that needs to be raised. There are two proposals to be considered and assume the tax rate is 30%.

Proposal X: The IT Director has proposed the following manner in which the €11 million should be raised as a combination of debt and equity as follows:

€2 million debt - the debt should be raised by borrowing from a bank at a fixed rate of 6% per annum.
€9 million equity - will be raised from an issue of shares. Shares with a similar systematic risk are currently offering an expected return of 11%.

Proposal Y: The Sales & Marketing Director has suggested that a higher level of gearing is required and has proposed the following:

The €7 million capital should come from lenders, and the €4 million from equity. The debt holders would require 7% per annum, while equity holders would expect a return of 16% annually.

REQUIREMENT:

The Finance Director has asked you to prepare a report containing a summary table comparing the weighted average cost of capital (WACC) for each proposal and provide advice on which proposal would most benefit the enterprise.

(a) Analyse New Company's cost of capital and present the following in tabular form:

(i) The Weighted Average Cost of Capital under Proposal X. (6 marks)

(ii) The Weighted Average Cost of Capital under Proposal Y. (6 marks)

(b) Recommend, which proposal should be selected, justifying your recommendation with reference to your answer in part (a).

(4 marks)

(c) Outline, if any, other factors New Company should consider when deciding which proposal to select? (4 marks)

[Total: 20 Marks]

3. **Answer <u>either</u> Part A <u>OR</u> Part B.**

Part (A)

H Limited is a wholesale hardware business supplying the construction industry. It operates through a number of stores and depots throughout Ireland and has one subsidiary, H-Next, that manufactures fireside accessories. The finance director of H Limited has been reviewing its working capital management and is considering a number of proposals that should lead to greater efficiency and effectiveness in this area:

- Appointing a credit controller to oversee the credit management of the stores and depots.
- Engaging a factoring company to take over the sales administration and trade receivables management of H-Next.
- Investing short-term cash surpluses on the Irish Stock Exchange. The finance director is particularly interested in the shares of a small company recently recommended by an online investment brokerage website.

REQUIREMENT:

(a) Critically discuss the importance of credit management to a company such as H Limited, and explain the areas to be addressed by a credit management policy.

(5 marks)

(b) Distinguish between factoring and invoice discounting, and explain benefits which the subsidiary H-Next might receive from a factoring company.

(5 marks)

(c) Discuss whether H Limited should invest short-term cash surpluses on the Irish Stock Exchange. (5 marks)

[Total: 15 Marks]

<u>OR</u>

Part B

"*Several different strategic performance management frameworks have been presented in the literature that seek to integrate financial and non-financial measures of performance and also facilitate strategy implementation and enhanced performance*" (Colin Drury).

REQUIREMENT:
Critically evaluate how Kaplan and Norton's 'Balanced Scorecard Framework' aims to achieve objectives referred to by Colin Drury.

[Total: 15 Marks]

SECTION B

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

4. **The following multiple-choice question contains eight sections, each of which is followed by a choice of answers. Only one answer is correct in each case. Each question carries equal marks. On the answer sheet provided indicate for each question, which of the options you think is the correct answer. Marks will not be awarded where you select more than one answer for any question.**

REQUIREMENT:

1. S Limited sells a much sought-after science book each year to secondary school pupils. The cost of placing an order is €30. Inventory carrying costs are 15% of the purchase price. Based on total annual demand, the cost of purchases is €1,000,000 at €10 per unit.

Using this information, the Economic Order Quantity (rounded to the nearest unit) is:

(a) 600
(b) 1,200
(c) 2,000
(d) None of the above.

2. You have extracted the following information from the financial statements of F Limited as at 30 June 2018.

Gross Profit	€500,000
Inventory	€500,000
Payables	€300,000
Receivables	€350,000
Gross Margin	10%

Based on the information provided above, rounded to the nearest day, what is the operating cycle in days (also known as the 'cash conversion cycle')?

(a) 42 days
(b) 67 days
(c) 16 days
(d) None of the above.

INFORMATION RELEVANT TO PARTS 3 AND 4 ONLY

An investor has two share portfolios Portfolio A and Portfolio B. The following information is given on returns and probabilities. The investor will need to calculate the expected returns of each portfolio

Portfolio A		Portfolio B	
Returns (€)	**Probability**	**Returns (€)**	**Probability**
1,000	20%	3,500	20%
2,500	30%	3,600	40%
4,000	20%	3,900	20%
5,000	20%	4,200	10%
6,500	10%	4,400	10%

3. For Portfolio A, the expected return is:

(a) €9,800
(b) €3,400
(c) €19,600
(d) None of the above.

4. For Portfolio B, the expected return is:

(a) €9,700
(b) €7,600
(c) €3,780
(d) None of the above.

5. In relation to the Capital Asset Pricing Model (CAPM), which, if any, of the following combined statements are correct?

(i) An underlying assumption of the CAPM is that unsystematic risk can be completely diversified away.
(ii) With the CAPM, it is easy in practice to measure the market return and individual shares return.
(iii) The main advantage of the CAPM over the traditional approach to measuring the return on a security is that the CAPM approach provides an enhanced reflection of the risk adjustment.

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

6. In relation to the use of bank loans as a source of finance, which, if any, of the following statements are correct?

(i) Loan interest is tax deductible and if a company has taxable profits this will decrease the net cost of loan capital.
(ii) The purchase of an asset financed by a loan will increase financial leverage and will increase net return on total assets.
(iii) Bank loans as part of the debt/equity ratio have a significant bearing upon profitability ratios.

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

INFORMATION RELEVANT TO PARTS 7, 8, ONLY

An Irish import business placed an order with a US company in March 2018 for a machine costing $90,000, with delivery due in June 2018. The March 2018 exchange rate was €1: $1.10, which was used to calculate the price in euros. The Irish company adds a mark-up of 10% in the quote to its customers. It had two scenarios to consider, depending upon whether the US dollar strengthened or weakened against the euro.

7. Dollar strengthened - By June, the US dollar strengthened to €1: $1.05. The Irish company calculated the impact of this transaction as:

(a) Profit of €4,285
(b) Loss of €4,285
(c) Loss of €8,570
(d) None of the above.

8. Dollar weakened – By June the US dollar weakened to €1: $1.30. The Irish company calculated the impact of this transaction as:

(a) Gain of €41,538
(b) Loss of €20,769
(c) Gain of €20,769
(d) None of the above.

[Total: 20 Marks]

5.

Answer either Part (A) <u>OR</u> Part (B)

Part (A)
S Limited manufactures mini-barbecue units for use in the summer months. These are sold to hardware stores and supermarkets. (S Limited's budgeted price is €40 per unit). The company uses a standard marginal costing system in accounting for labour and material costs. The standard cost of a portable mini-barbecue, based on normal production output of 1,000 units, is as follows:

	€
Material - Metallica Aluminium (100 kilograms @ 15c per kg)	15.00
Direct Labour (4 hours @ €2.50 per hour)	10.00
Variable Overheads (4 hours @ €1.50 per hour)	6.00

For May 2018, S Limited accepted orders for 1,200 mini-barbecue units, grossing income of €54,000.

The cost of production for May 2018 was:

Actual Costs:

	€
Aluminium (132,000 Kilograms)	15,840
Labour (5,100 hours)	13,260
Variable Overhead	7,650
Total Variable Costs	36,750

S Limited's management team has requested to receive a report on the financial performance for May 2018.

REQUIREMENT:

(a) Prepare an Operating Statement for May 2018, reconciling the actual and budgeted profit for the mini-barbecue product.

(12 marks)

(b) Analyse the possible reasons for the variances reported in (a) above, and recommend appropriate controls to deal with each of them.

(8 marks)

[Total: 20 Marks]

<u>OR</u>

Part (B)
Both Portfolio Theory (PT) and the Capital Asset Pricing Model (CAPM) have significant roles to play in Managerial Finance.

REQUIREMENT:
(a) Assess the assumptions underlying the CAPM and its application, and (10 marks)

(b) Evaluate briefly the difficulties in applying Portfolio Theory (PT). (10 marks)

[Total: 20 Marks]

END OF PAPER

SUGGESTED SOLUTIONS

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SOLUTION 1

(a) Calculate the four-year Net Present Value of the investment proposal if discounted at 10% (Ignore taxation).

	E Limited	Capital Investment					
Additional Relevant Cash Flows		**E Limited**					
	€						
Modifications to Existing machinery - Yr 0	140,000						
Testing Equipment - Opportunity Cost Yr 4	60,000						
Additional Working Capital	60,000						
Initial Marketing Costs	30,000						
Marketing Costs Refunded							
Annual Marketing costs	20,000						
Annual Maintenance Costs	10,000						
Additional Fixed Costs (Annual for Fabricating Machine)	40,000						
				Yr 1	Yr 2	Yr 3	Yr 4
Selling Price	50			50	55	60.5	55
Selling Price Increase	10%			10%	10%		
Units Increase	10%			10%	10%		
Variable Cost	5%			29	30.45	30.45	30.45
Contribution				21	24.55	30.05	24.55

			Yr 1	Yr 2	Yr 3	Yr 4
Unit Cash flows generated			Yr 1	Yr 2	Yr 3	Yr 4
Selling Price		50				
Selling Price Increase						
Variable Costs						
Direct Materials	10					
Direct Labour	7					
Variable Overheads	12	29				
		21				

	Per Unit	Year 0	Year 1	Year 2	Year 3	Year 4	
			4000	4400	4840	4840	
Contribution	21		84000	108020	145442	118822	
Machinery		-140,000					
Working Capital		-60,000				60,000	
Marketing		-30,000	-20,000	-20,000	-20,000	-20,000	
Maintenance			-10,000	-10,000	-10,000	-10,000	
NRV Testing Equipment (Yr4)						60,000	
Marketing Costs Refunded (Yrs 3 & 4)					27,500	27,500	
Additional Fixed Costs			-40,000	-40,000	-40,000	-40,000	
Cash Flow		-230,000	14,000	38,020	102,942	196,322	
10% Discount Factor		1	0.909	0.826	0.751	0.683	
PV Cash Flow		-230000	12726	31404.52	77309.44	134087.9	**25527.89**

Notes:

Irrelevant Costs	
Other Machine:	Book Value is irrelevant. It has no alternative use or disposal value that can be realised for cash . There is no opportunity cost
Consultant Report	Incurred cost - irrelevant to whether the project goes ahead or not
General Fixed Overheads	Will be incurred whether project goes ahead or not - Irrelevant cost
Bank Interest	Will be incurred whether project goes ahead or not - Irrelevant cost
Depreciation on Fabricating Machine	Non Cash Item 200,000 - 10,000 * 4 = 160,000/4 = 40,000 each year

NPV €25,228 (14 marks)

(b) The Managing Director of E Limited has heard of the term 'Capital Rationing' and the two types of Capital Rationing. Explain to the Managing Director the two types and how capital rationing could impact upon the proposed e-reader project

Capital Rationing restricts availability of funds for investments
Hard Capital Rationing – Externally imposed by Governments or Banks – Example Government impose funding restrictions (through Central Banks targeting sectors to restrict or increase availability e.g. Construction Sector & building of industrial units that are being encouraged Vs house building market that is being restricted)

Soft Capital Rationing – internally imposed by Management within the company. Example is where HQ limits the number of projects that can be submitted to HQ for approval so that local management have restricted power to approve above a certain threshold but has further advantage that project must meet minimum conditions at local level (e.g. 2 yr. payback) before being remitted to HQ for higher-level approval through NPV criteria

If Capital Rationing used & project finance availability restricted, then this would impact upon the e reader project. For example, initial outlay of €140,000 is required if capital rationing (either hard or soft) restricted funds availability below €140,000 then the project might not be considered.

(5 marks)

(c) Assess three non-financial factors to be considered before making a final decision whether or not to invest in the e-reader and make a final recommendation on whether or not to invest in the proposal.

Reliability of Target Market & market research to verify expected volume of business
Competitors & the unique selling point of this E Reader
Guarantee of Supply of raw material & where this is being sourced
Any implications for UK market & Brexit effect – either importing from UK or exporting to UK
Does 10% for cost of capital adequately reflect the risk profile of the E Reader Project?

Final Decision:

There is a healthy positive NPV in excess of €25,000 over the four-year life of the project but I am of the opinion that this project should be resisted for the following reasons

There are significant up- front costs of €140,000 to be paid for the first stage of modifying existing machinery to manufacture the E Reader – representing front loaded risk.

Significant questions still need to be answered about the unique selling point of the E Reader when compared with existing competitors in an overcrowded market that is dominated by large players (Kindle, Amazon etc.)

To generate the positive NPV we are depending upon realising the projected sales volumes and the projected cost structure being achieved.

(6 marks)

[Total: 25 Marks]

SOLUTION 2
(a)
(i) **Weighted Average Cost of Capital**

Proposal X	Debt	2					
	Equity	9				Weighting	
Cost of Debt	6 % x 1-t	0.06	0.7	0.042	4.20%	2/11th	0.764
Cost of Equity				0.11	11%	9/11h	9
							9.764

(6 marks)

(ii)

Proposal Y	Debt	7					
	Equity	4				Weighting	
Cost of Debt	7 % x 1-t	0.07	0.7	0.049	4.90%	7/11th	3.12
Cost of Equity				0.16	16%	4/11th	5.82
							8.94

(6 marks)

Value of New Company

	Cashflow/WACC	**Cash Flow**		**Co Value**
Proposal X	1 million/9.76	1,000,000	10241704	10.24
Proposal Y	1 million/8.94		11185682	11.19

(b) Accept Proposal Y as lower WACC due to tax shield benefits of debt. This also results in higher value of New Co.

(4 marks)

(c)
1. Reliability of Annual Cash flow estimates. These could be enhanced by applying probabilities.
2. What business is new Company in, what sector, what is track record of Directors, what are the Projected Financial Statements & Business Plans - how is New Company mitigating the unsystematic risk.
3. For equity shares of a systematic risk equivalent are currently offering 11% - what shares are being used here - how is this 11% being computed? What is the outlook for the market turbulences - interest rates, exchange rates & other related factors in the next few years.
4. For equity shareholding - what is composition of equity & power base of equity - e.g. large pension funds Vs small investors.

(4 marks)

[Total: 20 Marks]

SOLUTION 3

Part A

(a) Critically discuss the importance of credit management to a company like H Limited, explaining the areas to be addressed by a credit management policy.

The main aim of credit management is the successful implementation and maintenance of appropriate credit policies. These credit policies are not static, but will change over time in response to the changing competitive structure of the construction industry. Successful control of trade receivables will directly influence the liquidity of the firm. The policies will cover a number of key areas:

- Procedures to be followed in giving credit to customers (credit analysis system)
- Setting credit limits for customer accounts (credit control system)
- Determining the discount structure
- Managing the collection of amounts due and overdue (trade receivables collection system).

Credit management is also concerned with minimising losses from bad debts and with taking steps to ensure that as much as possible is recovered if a client goes into liquidation. The credit controller should balance the benefits to be gained from offering credit to customers against the costs of doing so.

Credit analysis system
The risk of bad debts can be minimised if the creditworthiness of new customers is assessed and reviewed on a regular basis. Relevant information can be obtained from a variety of sources including bank references, trade references, published information, credit agencies and the company's own experience.

Credit control system
- Customer accounts should be kept within agreed credit limit.
- Credit limits should be reviewed periodically.
- Invoices should be despatched promptly.
- Statements should be sent out regularly where appropriate.

Trade receivables collection system
- Costs of debt collection should not exceed amounts recovered.
- Aged trade receivables analysis must be regularly performed and late payers chased.
- Company should establish procedure for pursuit of late payments
- Company could consider charging interest on overdue bills.

(5 marks)

(b) Distinguish between factoring and invoice discounting, and explain the benefits that H–Next might receive from a factoring company.

Factors offer a range of services in the area of sales administration and the collection of amounts due from trade receivables, including:
- Administration of sales invoicing and accounting.
- Collection of amounts due and chasing up slow payers.
- Advance of cash against the security of accounts receivable.
- Offering protection against non-payment through non-recourse factoring.

Invoice discounting, however, involves the sale of selected invoices to another company. It is a service often provided by factoring companies; its value to the vendor lies in the improvement in cash flow that results. Among the advantages of factoring for a company are:
- Prompt payment of suppliers, perhaps early payment discounts.
- Reduction in amount of working capital tied up in trade receivables.
- Financing growth through sales.
- Savings on sales administration costs.
- Gaining from factor's experience in credit control.

(5 marks)

(c) Discuss whether H Limited should invest short-term cash surpluses on the Stock Exchange.

Companies like H Limited have a number of reasons why they may want to hold funds in liquid or near-liquid form. Cash that is surplus to immediate needs should generate profit for the company by being invested on a short-term basis without risk of capital loss. Large companies will set limits on the amount that they will deposit with individual banks, since credit risk should be taken into account by placing funds with a number of acceptable institutions. The factors to be considered when choosing appropriate short-term investments are:

- The size of the surplus, since some instruments have minimum amounts.
- The ease with which an investment can be realised.
- The maturity of the investment.
- The risk and the yield of the investment.
- Any penalties that may be incurred for early liquidation.

Short-term instruments for use in the management of corporate liquidity include money market deposits, sterling certificates of deposit, treasury bills, sterling commercial paper and gilt-edged government securities nearing maturity. Ordinary shares listed on the Stock Exchange carry a significant risk of capital loss and are not suitable for the investment of H Limited's short-term cash surpluses.

(5 marks)

[Total: 15 Marks]

(B) Traditional Measurement systems – failings – oriented towards historic information – past events – financial measures only - non financial not considered (e.g. customer orientation lacking) overly focused on profits – past measurements – short termism - focused on results rather than warning signals or opportunity exploitation indicators/alignment with corporate objectives & strategic position. In the past cost reduction & efficiencies overly emphasised with traditional systems. Need to consider effectiveness & information value (both financial & non-financial indicators) of organisational effectiveness – are we doing the right things and in what strategic/tactical/operational areas should we concentrate

Need for framework that links with corporate strategy; performance measurements both financial and non-financial, outside in view of organisation where significance of customer retention Vs shareholder value understood. Need to start with Corporate Strategy, mission and objectives so that SWOT analysis/kpi's that are relevant can be identified – then selected – then measured – then managed.

Kaplan & Norton – What gets measured gets managed. Measures need to be (1) linked with corporate strategy (2) financial and non-financial (3) internal and external (4) historic information coupled with future oriented indicators of areas to improve performance.

Four dimensions/perspectives/areas suggested by K&N -
Customer, Financial, Internal Business Processes, Innovation & Learning. Balanced Scorecard intended to provide answers to four key questions

Customer perspective – How do customers see the company?
Financial perspective – How does the organisation look to shareholders?
Internal perspective – What must the organisation excel at
Innovation & Learning – Can the company continue to improve (to be more effective) and to create value.
Diagram of Framework to be shown by candidates.
Within each perspective uniform & consistent approach - agree set of objectives, performance measurements (eye upon kpi/goal congruence)/performance targets, recording of actual performance against the measure, report and correct deviations (but not from a narrow traditional view but holistic view) for action to be taken with initiatives for organisational effectiveness.
Examples can be provided of sectors/industries enabling candidates to be rewarded for these.

[Total: 15 Marks]

SOLUTION 4

1 C

Economic Order Quantity
EOQ = Square Root [2 (Annual Demand) (Cost per Order)] / (Annual Holding Cost)

Sq Root 2 (100,000) (30)/0.15(10) = 2,000 Units **(C)**

2 A
Cash Conversion Cycle 42 Days **(A)**

Cash Conversion Cycle

Formula				
Receivables (Days)	Receivables/Sales x 365		25.55	
Stock Turnover (Days)	Inventory/Cost of Sales x 365		40.55556	
Payables (Days)	Payables/Cost of Sales		24.33333	
			41.77222	say 42 days
Gross Margin	Gross Profit/Sales	10%		
Sales	5,000,000			
Cost of Sales	4,500,000			

3 B
Expected Return is €3,400 **(B)**

Portfolio A

Expected Return X	Prob	X * P
1000	0.2	200
2500	0.3	750
4000	0.2	800
5000	0.2	1000
6500	0.1	650
		3400

4 C
Expected Return is €3,780 **(C)**

Portfolio B

Expected Return X	Prob	X * P
3500	0.2	700
3600	0.4	1440
3900	0.2	780
4200	0.1	420
4400	0.1	440
		3780

5 B
Statement (i) is correct.
Statement (ii) is incorrect. It is not easy to measure market return and return of individual shares due to market imperfections
Statement (iii) is correct. The CAPM formula uses Beta with the excess of the risk free return vis-a-vis the market return. Risk is reflected in the CAPM formula. The traditional approach by comparison may use Gordon's growth model that has the dividend and the market price of the share with an extrapolated growth rate but there is no overt mention of risk within Gordon's formula.

6 **D**
Statements (ii) and (iii) are incorrect.
Statement (i) is correct.

7 **B**

8 **C**

Machine Cost (USD)			90,000
Ex Rate			1.1
Converted Value (Euro)			81818.18
Mark Up			10.00%
Total Quote			90000
Scenario 1	Q7		
Dollar Strengthens			
Ex Rate			1.05
Converted Value (Euro)			85714.29
Net Gain/Loss		90000	
			-4285.714
	say		**€4,285 Loss**
Scenario 2	Q8		
Dollar Weakens			
Ex Rate			1.3
Converted Value (Euro)			69230.77
Net Gain/Loss		90000	
			20769.23
	say		**€20,769 Gain**

Marking Scheme

8 Questions – 2.5 marks each **[Total: 20 Marks]**

SOLUTION 5

Part (A)

(a)

	S Limited		**Variance Analysis** **Variances** **Favourable**	**Variances** **Adverse**		**Total**
Budgeted Contribution	1000 *	40-31				9,000
Variances						
Sales Price	(45-40) *	1200	6000			
Sales Volume	(1000 -1200) *	(40-31)	1800			
Aluminium Price	(0.12- 0.15)	132,000	3960			
Aluminium Usage	132,000 - (100 *1200) *	0.15		1,800		
Labour Rate	(2.60 - 2.50)	5100		510		
Labour Efficiency	(5,100 - (4 *1200)	2.5		750		
Variable O/Head Expenditure	1.5 - 1.5	5100				
Variable O/Head Efficiency	5100 - 1200 * 4	1.5		**450**		
Net Variances			11760	3510	8250	**8250**
Actual Contribution	54,000 -36,750					**17250**

(12 marks)

(b) Sales Variances – both favourable due to higher volumes and higher sales prices than budgeted

Cost variances – raw material price variance favourable – buyer may have bought poorer quality materials at lower prices – overall effect of adverse efficiency variances for both materials & labour as more quantity and more hours required for production. Adverse Variable efficiency variance also supports this view as greater amount of indirect labour and variable overheads (e.g. machine usage/ light & heat/factory power required.

Adverse usage & efficiency variances – another possible cause could be poor supervision of staff leading to idle time & poor materials handling.

Adverse labour rate variance may reflect idle time while machines being maintained or setups being changed with these inferior quality materials.

Possible corrective actions

Use quality of material expected in the standard
Enhanced training of staff in manufacturing the barbecue unit
Supervise staff more closely (8 marks)

[Total: 20 Marks]

Part (B)

(a) Explain briefly the assumptions underlying the CAPM

- Investors hold diversified portfolios – Unsystematic risk already factored in & can be ignored – investors now require return for systematic risk – market risk only
- Single Period Transaction horizon – Assumed so that comparisons are eased – we need to be comparing over the same period – usually 1 year
- Investors can borrow and lend at the risk free rate of return – Assumption derived from Portfolio Theory (Markowitz) & this provides minimum level of return for investors
- Perfect Capital Market – This means that all securities will be valued correctly & can be plotted on the SML (Security Market line)
- Perfect Capital Market requires that these further assumptions hold true - note that the term is perfect – not 'use of term efficient'
- No Taxes or transaction costs
- Large number of buyers & sellers – no party dominant
- All investors are risk averse, rational & desire to maximize their own utility (note use of maximize and not satisfice)
- Perfect information is freely available to all investors who as a result have the same expectations.

(10 marks)

(b) Explain briefly the difficulties in applying Portfolio Theory (PT)

- Unrealistic to assume Investors can borrow at risk free rate. As premium charged by lenders for higher risk
- Problems with identifying the market portfolio that is dynamic. This requires knowledge of risk & return of all risky investments & correlation co-efficient
- Composition of the market portfolio that is dynamic – changes over time due to shifts in risk free rate & envelope curve & hence efficient frontier.
- Once composition of market portfolio identified – expensive to construct due to transaction costs; for smaller investors transaction costs too expensive

(10 marks)

[Total: 20 Marks]