CPA IRELAND | CERTIFIED PUBLIC ACCOUNTANTS

MANAGERIAL FINANCE

PROFESSIONAL 1 EXAMINATION - AUGUST 2016

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

MANAGERIAL FINANCE

PROFESSIONAL 1 EXAMINATION – AUGUST 2016

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

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

1. Ms. CL intends to start a business on 1 January 2017 and she wishes to examine in detail her forecasted financial performance and position for the first four months of trading. Ms. CL has secured orders for security equipment units for which she has recently obtained the exclusive distribution rights, covering all of the Irish market for five years (2017 – 2021 inclusive). The cost of these distribution rights (€96,000) will be paid in January 2017 and it has been decided to amortise this cost on a straight line basis over the first five years of trading allocated on a monthly basis.

Initially, the business will be financed by capital of €17,000 introduced by the owner and a loan from a financial institution that will provide 90% of the finance required for the purchase of three vehicles at a cost of €28,000 each. All of these transactions will occur on the first day of trading. The owner has negotiated terms for the vehicle loan so that there will be no capital repayments for the first year and interest of 12% per annum based on the amount outstanding at the start of the year will be paid half-yearly in arrears. The cost of the vehicles will be written off over four years on a straight-line basis.

The forecast Gross Profit margin is 40%. Units for resale will be purchased in January 2017 sufficient for the forecasted sales for the first two months of trading. From 1 February onwards, purchases each month will be sufficient for that month's forecasted sales. No other costs are to be included with the cost of sales. Trade suppliers will allow credit of one month.

Details of expenses include:

- An agreement has been signed so that the business will rent an office and a small storeroom for €60,000 per annum. Rent will be paid quarterly in advance commencing on the first day of trading. On that date, a deposit amounting to rent for four months will also be paid.
- Net wages of €4,000 will be paid each month. Deductions (for PAYE, PRSI etc.) estimated at 35% of the net wages will be paid one month in arrears.
- Monthly fixed costs will amount to €3,900 including the depreciation of the vehicles. The remaining amounts will be paid each month as incurred.

The details regarding forecasted sales are as follows:

- It has been forecasted that sales for January will be 100 units at €800 per unit. The number of units sold will increase by 10% in February and will remain at that level for the next three months. The selling price will increase by 25% in March and that price will remain for the rest of the year.
- Each month 50% of sales will be on a cash basis.
- Credit customers will be allowed credit of two months. It has been estimated that 70% of the credit customers will pay on time, 20% will pay one month late, and the remainder will pay in the following month.

You have also been informed that the owner, Ms. CL, will withdraw cash of €5,850 per month for personal use. Value Added and Income Tax considerations may be ignored.

REQUIREMENT:
Based on the information provided on Page 1, prepare a report for Ms CL with the requested information outlined below relating to the first four months of trading presented on separate pages. Any detailed workings should be shown on separate pages at the end of the report

(a) A Cash-flow forecast for each of the first four months of trading clearly identifying the closing cash balance at 30 April 2017.

(9 marks)

(b) A Forecast Trading and Income Statement for the total of the first four months of trading clearly identifying the Net Profit for the period ending 30 April 2017.

(8 marks)

(c) A Forecast Balance Sheet (Statement of Financial Position) at 30 April 2017, clearly identifying the Net Assets at that date.

(8 Marks)

[Total: 25 Marks]

2. T Limited is a private company that has operated in the building supply sector for 12 years. One of its directors and main shareholders will retire in the near future and the other directors have asked you to advise them on a range of valuations for the company as a basis for negotiating a price that will be paid for the 30% shareholding of the director planning to retire.

As part of your research on the background to this company, you have been provided with the information outlined below.

T Limited
Extracts from the Balance Sheet as at 31 March 2015

	€'000
Non-Current Assets	
Intangibles	1,500
Property Plant & Equipment	5,500
Investments	1,250
Total Non-Current Assets	**8,250**
Current Assets	
Inventory	950
Receivables	640
Cash and Cash Equivalents	870
Total Current Assets	**2,460**
Current Liabilities	
Payables	2,010
Other Liabilities	400
Total Current Liabilities	**2,410**
Non-Current Liabilities	
Long-term Borrowings	3,460
Pension Obligations	990
Other Provisions	400
Total Non-Current Liabilities	**4,850**

Extracts from the Income Statement for year ended 31 March 2015

	€'000
Revenues	5,400
Operating Expenses	3,200
Operating Profit	2,200
Interest Costs	400
Profits Before Tax	1,800
Tax	360
Profit for the Year	1,440

The figures from the Income Statement are in line with the average results from the previous three years of trading. Recently, due mainly to a number of takeovers, there has been a surge in the market price of similar quoted companies resulting in average P/E multiples of 24. It has been agreed that this should be reduced by 25% to reflect T Limited's private company status.

It has also been agreed that the following valuation multiples should be applied to the most recent figures from the financial statements both before and after the adjustments described below:

Basis	**Agreed Multiple (Both before and after adjustments)**
Net Assets	1
Earnings before Interest, Tax, Depreciation and Amortisation	9
Earnings Before Interest and Tax	12

During the course of your investigations, the following verifiable information from reliable independent sources has been revealed:

- The Intangibles figure is the value of a patent held by the company as estimated by the directors but an independent expert has stated that it has no value. There has been no amortisation of the intangible asset.
- The total value of the Plant and Equipment has been understated by 10%.
- The Investments have reduced in value by €240,000 since the date of the balance sheet.
- Due to obsolescence, 20% of the Inventory should be written off.
- A credit rating agency has found that one quarter of the amounts owing by credit customers will not be received.
- The Pension Obligation has been overstated by €210,000.
- A recent adverse ruling in a court case resulted in a large payout by the company. This had been included in the balance sheet as 'Other Provisions' but was underestimated by 30%.

From further analysis of the financial statements, it has been ascertained that:

- Depreciation was based on writing off the historic cost of Plant and Equipment over five years. The adjusted figure should be calculated on the basis of the same rate of depreciation based on the revised updated value of the Plant and Equipment.
- Only the changes in respect of Depreciation, Inventory and Receivables should be charged to the adjusted operating expenses.
- All other changes in market values to balance sheet items should reduce Equity directly, without affecting Income Statement figures.
- A corporation tax rate of 20% should be applied to profits before tax both before and after adjustments.

REQUIREMENT

(a) Prepare a Table that shows the estimated valuations of the company both before and after the adjustments described above. Note that the results of your calculations only should be shown in the table. Any workings should be shown on separate pages. The following methods should be used:

(i) The Net Asset basis
(ii) Earnings Before Interest, Tax, Depreciation and Amortisation (EBITDA) Multiple
(iii) Profit before Interest and Tax (EBIT) Multiple
(iv) The P/E basis

(16 marks)

(b) Briefly evaluate the use of one of the methods above as the basis for company share valuation. (4 marks)

[Total: 20 Marks]

3. Answer either Part A OR Part B.

In a report published by the ESRI (Economic and Social Research Institute) in 2014, the following observations were made in relation to the financing of SMEs.

"As the economy moves into growth after the recent difficult period, ensuring that small and medium enterprises (SMEs) are in a position to expand, investment and employment will play a central role in the sustainability of the recovery. Access to finance is an important component in facilitating this. The risks involved in over-reliance on bank credit have been well-illustrated by the experience of the financial crisis. Learning from this, the development of a financing ecosystem for SMEs that provides a diversified set of debt and equity options from a range of sources is an important element in building a robust and successful SME sector."

"SMEs play a crucial role in the Irish economy, accounting for the vast majority of businesses and most employment. Access to finance is an important determinant of a firm's ability to grow."

"High debt burdens relative to turnover can have negative effects and […] over-indebtedness impedes performance and increases default probabilities."

Part A
REQUIREMENT:
Discuss critically the appropriateness of the various types of equity, debt and other sources of finance available for Irish SMEs and the risks associated with these sources.

[Total: 15 Marks]

OR

Part B
REQUIREMENT:
Discuss critically the key corporate governance issues in managerial finance as profit-seeking organisations grow from small business into publicly quoted companies.

[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.**

INFORMATION RELEVANT TO REQUIREMENTS 1, 2, 3, 4 AND 5 ONLY

Extracts from the Statement of Financial Position as at 31 March 2016 for PB plc have been provided below.

	€m
5% Irredeemable Debentures (€1 each)	600
8% Preference shares (€2 each)	200
Ordinary shares (€5 each)	900

Other relevant information:

- The Corporation Tax rate is 20%.
- The Irredeemable Debentures are currently trading at a premium of 10%.
- The market value of the Preference shares ex dividend is €1.80 per share. All preference share dividends have been paid in full for the year ended 31 March 2016.
- The market value of the Ordinary shares cum dividend is €8.80 per share. The company has recently declared an ordinary dividend of €0.60 per share which will be paid within the next week. Independent analysts have predicted that the company will pay an ordinary dividend of €0.63 next year and that rate of dividend growth will be maintained for the foreseeable future.
- In order to take advantage of recent decreases in interest rates, the company is considering the issue of 400 million 3.5% Debentures with a nominal value €1 each that will trade at a discount of 4%.

REQUIREMENT:

1. The company's current cost of Irredeemable Debentures is approximately:

   (a) 3.6%
   (b) 4.0%
   (c) 4.5%
   (d) None of the above

2. The company's current cost of Preference shares is approximately:

   (a) 4.4%
   (b) 7.1%
   (c) 8.9%
   (d) None of the above

3. The company's current cost of Ordinary shares is approximately:

   (a) 6.2%
   (b) 7.7%
   (c) 12.7%
   (d) None of the above

4. The company's current weighted average cost of capital is approximately:

   (a) 8.4%
   (b) 9.8%
   (c) 12.7%
   (d) None of the above

5. If the company proceeds with the proposed issue of new Irredeemable Debentures, its gearing percentage will be approximately:

(a) 36%
(b) 46%
(c) 57%
(d) None of the above

Note: Gearing % =
Market Value of prior charge capital / (Market Value of equity + Market Value of prior charge capital)

INFORMATION RELEVANT TO PART 6 ONLY

Analysis of the financial statements of M Limited has revealed the following information:

Cost of Sales	€500 million
Payables	€45 million
Inventory	€38 million
Receivables	€63 million
Mark-up	25%

6. Based on the information provided above, rounded to the nearest day, what is the operating cycle in days?

(a) 42 days
(b) 56 days
(c) 62 days
(d) None of the above

7. The total cost of purchases for a product based on total annual demand is €896,000 at €80 per unit. The cost per order is €3 and the annual holding cost is 10% of the purchase price. Based on this information, the Economic Order Quantity (rounded to the nearest unit) is:

(a) 81 units
(b) 92 units
(c) 98 units
(d) None of the above

8. B plc is listed on a stock exchange. On July 14th, it received a confidential letter from K plc making a formal enquiry about a possible takeover of B plc at a price 15% above the quoted price on that date. On July 25th, the day of B's AGM, the contents of this letter became public information.

Which of the following combinations of possible share price movements for B plc would you expect on July 25th assuming semi-strong and strong forms of market efficiency?

Answer	**Semi-Strong**	**Strong**
(a)	Increase	Increase
(b)	No effect	No effect
(c)	No effect	Increase
(d)	Increase	No effect

[Total: 20 Marks]

5.

Answer either Part (A) OR Part (B)

Part (A)

MM Limited manufactures a floor covering product for customers throughout Ireland. It has traded successfully for four years but the directors are concerned that recently, actual operating profit has been less than the figure agreed at the budget meeting held at the start of each month.

Information from the standard cost card (based on ideal conditions) for the company's product is summarised below.

Standard Costs per unit

Cost Item	Quantities	€
Materials	20 metres x €1.20 per metre	24
Direct Labour	12 minutes x €15 per hour	3
Variable Overheads	12 minutes x €25 per hour	5

Reports from the Sales Department state that 1,600 units of the product were sold for €192,000. There was no opening or closing inventory of materials.

A review of the minutes from the meeting for July 2016 shows that the budgeted selling price was €125 per product unit and budgeted sales for the month were 2,150 units.

The actual results for July 2016 are provided below.

Actual Costs

Cost Item	Quantities	€
Materials Consumed	38,400 metres	42,240
Direct Labour	480 hours	6,960
Variable Overheads	480 hours	13,344

REQUIREMENT:
Prepare a report for the directors of MM Limited that includes:

(a) An Operating Statement for July 2016 reconciling the actual and budgeted contribution showing the amounts and nature of the variances *(Favourable or Adverse)*.

(13 marks)

(b) A concise analysis of three of the variances that have been identified assessing the likely causes and factors that have contributed to the failure of the company to produce accurate budgets.

(7 marks)

[Total: 20 Marks]

OR

Part (B)

REQUIREMENT:

(a) Critically appraise the role of the Capital Asset Pricing Model in Portfolio Theory and its relevance to current investment practice.

(12 marks)

(b) Investment appraisal is an important part of managerial finance. There are a number of techniques available to enable an organisation to make informed decisions regarding proposed investment projects. Critically analyse two of these techniques highlighting their strengths and weaknesses.

(8 marks)

[Total: 20 Marks]

END OF PAPER

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SOLUTION 1

(a) Ms CL – Forecast Cash Flow

Q 1	Ms CL			
Forecast Cash Flow				
	Jan	**Feb**	**Mar**	**April**
Inflows	**€**	**€**	**€**	**€**
Cash Sales	40,000	44,000	55,000	55,000
Credit Sales	-	-	28,000	38,800
Capital Introduced	17,000			
Bank Loan	75,600			
Total Inflows	**132,600**	**44,000**	**83,000**	**93,800**
Outflows				
Machinery	84,000			
Distribution Rights	96,000			
Payments to suppliers	-	100,800	52,800	66,000
Net Wages	4,000	4,000	4,000	4,000
Deductions from wages		1,400	1,400	1,400
Fixed Costs	2,150	2,150	2,150	2,150
Rent	15,000			15,000
Rent - Deposit	20,000			
Loan Interest				
Drawings	5,850	5,850	5,850	5,850
Total Outflows	**227,000**	**114,200**	**66,200**	**94,400**
Net Cash Flow	- 94,400	- 70,200	16,800	- 600
Opening Balance	0	- 94,400	- 164,600	- 147,800
Closing Balance	**- 94,400**	**- 164,600**	**- 147,800**	**- 148,400**

(b) Ms CL – Forecast Trading and Income Statement

	Ms CL			
Forecast Trading and Income Statement		**for the period ending**		
		30th April 2016		
	€	**€**		
Sales		388,000		
less: COS				
Purchases (W2)	285,600			
less: Closing Inventory				
(missing figure)	- 52,800			
less: Cost of Sales (60% of Sales	232,800	232,800		
Gross Profit (40% of Sales)		**155,200**		
less: **Expenses**				
Total Wages Cost	21,600			
Fixed Costs	8,600			
Rent	20,000			
Interest	3,024			
Amortisation	6,400			
Depreciation	7,000			
Total Expenses		66,624		
Net Profit / Loss		**88,576**		

(c) Ms CL – Forecast Statement of Financial Position at 30 April 2017

	€	€	€
	Cost	**Deprec. / Amortis.**	**NBV**
Fixed Assets			
Machinery	84,000	- 7,000	77,000
Distribution Rights	96,000	- 6,400	89,600
Current Assets			
Inventory / Stock	52,800		
Prepaid Rent	30,000		
Receivables / Debtors	127,200		
		210,000	
less: **Current Liablilities**			
Payables / Creditors	66,000		
Wages Deductions Accrual	1,400		
Bank Interest Payable	3,024		
Bank O/ D	148,400	- 218,824	
Net Current Assets / Liabilities			- 8,824
			157,776
Long Term Liabilities			
Bank Loan			- 75,600
NET ASSETS			**82,176**
Capital			
Capital Introduced			17,000
Net Profit / Loss			88,576
			105,576
Drawings			- 23,400
EQUITY/CAPITAL			**82,176**

WORKINGS

W 1	Jan	Feb	Mar	April	**Total**
Sales	80,000	88,000	110,000	110,000	**388,000**
Cash Sales (Sales x 50%)	**40,000**	**44,000**	**55,000**	**55,000**	
Credit Sales: (Sales x 50%)					
Collected + 2 mos					
((Sales x 50%) x 70%)			28,000	30,800	
Collected + 3 mos					
((Sales x 50%) x 20%)				8,000	
					Total
Total Inflows - Credit Sales	**0**	**0**	**28,000**	**38,800**	**66,800**
W2					
Purchases					**Total**
January:					
(Jan + Feb Sales) x 60%					
(+) x 60%	100,800				
All other months (60% of Sales)		52,800.0	66,000.0	66,000.0	**285,600**
					Total
Payments to Suppliers	**0**	**100,800**	**52,800**	**66,000**	**219,600**

W3			
Receivables / Debtors		**€**	
Total Sales (W1)		388,000	
% of Sales on Credit (see ques)	x	50%	
Total Credit Sales		194,000	
less: Total Inflows from			
Credit Sales (W1)		- 66,800	
Amount Owing by Customers		**127,200**	
W4			
Payables / Creditors			
Total Purchases (W2)		285,600	
less: Total Amounts paid			
to Suppliers		- 219,600	
Amount owing to Suppliers		**66,000**	

SOLUTION 2

(a)

ESTIMATED VALUATIONS	Prior to Adjustment	Post Adjustment
Method	**€000s**	**€000s**
Net Assets	3,450	2,000
EBITDA	29,700	26,550
EBIT	26,400	20,880
PAT	25,920	19,296

(b) Critical evaluation of EBITDA as a basis for company share valuation

Share valuation is not an exact science and all methods rely on a certain amount of judgement. EBITDA is used by some analysts and those attempting to value shares. Its proponents highlight that EBITDA can give a consistent picture of a company's operating profits stripped of the depreciation and amortisation figures which can vary from firm to firm depending the estimates of the valuations and remaining useful lives of the tangible and intangible assets.

However, critics of this method point out that EBITDA is often used as a measure of performance by companies that cannot generate actual profits (i.e. PAT or even EBIT). Its critics are also concerned that the reporting of EBITDA is not governed by any accounting standard. Furthermore, depreciation and amortisation are legitimate business expenses and give an indication of an appropriate charge against profits to account for the reduction in value of the relevant tangible and intangible assets.

In common with all methods that are based on a multiple of revenues, earnings etc. a considerable amount of subjectivity is involved in the selecting the amount of the multiple used in the valuation of a company's share.

Workings

W1

Net Assets Basis	**Bal. Sheet Per Ques**			**Adjustments**	**Revised Amounts**
	€000s			€000s	€000s
Intangibles	1,500	-	100%	-1,500	0
PPE	5,500	+	10%	550	6,050
Investments	1,250	-		-240	1,010
Inventory	950	-	20%	-190	760
Receivables	640	-	25%	-160	480
Cash etc	870				870
Total Assets	10,710			-1,540	9,170
Total C. Liabilities	2,410				2,410
LT Borrowings	3,460				3,460
Pension Obligations	990	-		-210	780
Other Provisions	400	+	30%	120	520
Total Liabilities	7,260			-90	7,170
Net Assets (or Equity)	**3,450**			**-1,450**	**2,000**

W2 Income Statement		Prior to Adjustments Per Ques €000s		Adjustments €000s		Post Adj. €000s
y/e 31 December		2016				
W2						
Adjustments to Revenues and Profits						
Revenues		5,400				5,4
General Operating Expenses						
Excluding Depreciation	**(W2a)**	2,100	+	190	160	2,4
EBITDA		3,300				2,9
Depreciation: 20% x	5,500	1,100	20%	x	6,050	1,2
Earnings Before Interest and Tax		2,200				1,7
Interest Costs		400				4
Profits Before Tax		1,800				1,3
Tax at	20%	360				2
PAT		1,440				1,0

W2a		
General Operating Expenses		
per Question		3,200
Depreciation: 20% x	5,500	1,100
(Operating Exps. Excl. Depreciation)		2,100

W3
Valuations based on Multiples

(Prior to Adjustments)	Prior to Application of Multiple €000s		Multiples	Valuation €000s
EBITDA	3,300	x	**9**	29,700
EBIT	2,200	x	**12**	26,400
PAT	1,440	x	**18** *(W4)*	25,920

(Post Adjustments)	Prior to Application of Multiple €000s		Multiples	Valuation €000s
EBITDA	2,950	x	**9**	26,550
EBIT	1,740	x	**12**	20,880
PAT	1,072	x	**18** (W 4)	19,296

W4 **P/E Ratio**			Adjustment	Adjusted P/E
Comparable P/E	24	-	25%	**18**
(To be applied to PAT only)				

SOLUTION 3

Part A

Sources of finance available for Irish SMEs

Relevant sources of finance for Irish SMEs include (but are not restricted to) any of the following:

Debt	Term Loans - Long, Medium, Short Leasing, Debt Factoring Overdrafts Peer to Peer Lending etc.
Equity	Capital invested by owners Retained Profits Angel Investors Employment and Investment Incentive Scheme (EIIS) Venture Capital (note potential problems with convertibles etc.)
Other	Crowdfunding Grants - availability will depend on category and location of business e.g. for manufacturing businesses & internationally traded services, Enterprise Ireland can provide grant and other assistance. However, for other businesses such as retail, distribution, local services etc there is limited availability.

Part B

Key corporate governance issues

Valid points could include (but are not restricted to) any of the following:

Corporate governance can be seen as the system of management and control of the corporation for the benefit of the owners, but can also encompass the concerns of other stakeholders such as employees, customers, suppliers of goods and services, providers of finance, government and the wider community. It provides the framework for the organisation to achieve its objectives.

The key issues in corporate governance are a function of the viewpoints regarding the objective of the organisation as well as the stage of its growth and development.

Viewpoints regarding the objective of organisations:
For profit-seeking organisations, the 'standard' approach for managerial finance is to maximise shareholder/owner wealth.

However, even if primarily profit-seeking, there is an alternative viewpoint that organisations have a wider responsibility to other stakeholders. Advocates of this approach point out examples of corporate scandals such as – Enron, WorldCom etc. that illustrate the shortcomings of the narrow focus on financial gain.

Stages of organisational development and corporate governance:
Small firms – owner managers will seek a fair return for their efforts but may also be motivated by non-financial factors such as the need for independence, employment for family members etc. Due to the small size or operations, corporate governance is usually quite informal.

Medium-sized organisations – similar issues to small firms but a need to interact with a larger number of employees, customers, suppliers etc. in tandem with managing and controlling costs, cash flow etc. gives rise to the need for more formal corporate governance.

Large organisations that 'go public' and seek/obtain a stock exchange listing – these organisations will be subject to more public scrutiny and regulation – Sarbanes Oxley 2002 etc.

It could be argued that effective corporate governance for organisations of all sizes can create 'win-win' situations whereby profitable, cash-generating projects can be undertaken in a socially responsible manner so that they maximise shareholder wealth, create jobs and contribute to the economic and social well-being of the wider community.

SOLUTION 4

1 A
2 C
3 C
4 B
5 B
6 D
7 B
8 D

WORKINGS

Q1) **Cost of Irredeemable Debentures**

$$\textbf{Kd} = \frac{\text{Interest} \times (1 - t)}{\text{BV D ex div} \times \text{Val. Factor}}$$

$$= \frac{30 \times (1 - 0.20)}{600 \times 1.10}$$

$$= 0.0364 \text{ or } 3.64\%$$

Q2) **Cost of Preference Shares**

$$\textbf{Kps} = \frac{\text{Div per Share}}{\text{MV PS ex div}}$$

$$= \left(\frac{\text{\% Rate} \times \text{Total Value}}{\text{MV PS ex div}} \Big/ \text{No of Pref Shares}\right)$$

$$= \left(\frac{8\% \times 200 \text{ m}}{1.8} \Big/ 100 \text{ m}\right)$$

$$= 0.0889 \text{ or } 8.89\%$$

Q3) **Cost of Ordinary Shares**

$$\textbf{Ke} = \frac{Do \times (1 + g)}{(\text{MV E cum div} - Do)} + g$$

$$= \frac{0.60 \times (1 + 0.05)}{(8.8 - 0.60)} + 0.05$$

$$= 0.0768 + 0.05$$

$$= \textbf{0.1268 or 12.68\%}$$

$$\textbf{g} = \frac{D1 - Do}{Do}$$

$$= \frac{0.63 - 0.60}{0.60}$$

$$= 0.05$$

Q4) **WACC**

Capital Source	MV €m	MV Weights	Cost of Each Source	Weighted Cost
Ordinary Shares	1,476	0.6373	12.68%	8.08%
Preference Shares	180	0.0777	8.89%	0.69%
Irredeemable Debentures	660	0.285	3.64%	1.04%
Total	2,316	1.0000		9.81%

Q5) **Revised Gearing**

$$= \frac{\text{MV Prior Charge Capital}}{(\text{MV Prior Charge Capital + MV Equity})} \times 100$$

$$= \frac{(180 + 660 + 440)}{(1{,}280 + 1{,}476)} \times 100$$

= **46.44%**

Q6)

		€m
Sales	125%	300
COS	100%	240
GP	**25%**	60

	€m	DAYS
Inventory	25.0	38.0
Receivables	37.0	45.0
Payables	23.0	-35.0
Operating Cycle		**48.1**

Q7) $EOQ = \sqrt{[\,2\,(\text{Annual Demand})\,(\text{Cost per Order})\,] \;/\; (\text{Annual Holding Cost})}$

$$EOQ = \sqrt{[\,2\,(11{,}200)\,(3)\,] \;/\; (80 \times 10\%)}$$

$$EOQ = \sqrt{[\,67{,}200\,] \;/\; 8}$$

$$EOQ = \sqrt{8{,}400} = \mathbf{91.65}$$

Q8) If the Stock Market operates at a semi-strong level of efficiency, the news of the takeover at the increased price would not have become public knowledge on July 14th and therefore there would be an increase in price on July 25th when news of the takeover became current and public information

If the Stock Market operates at a strong level of efficiency, the news of the takeover at the increased price would have become public knowledge at or near to July 14th and therefore there would be no increase in price on July 25th.

SOLUTION 5

Part (A)

(a) Reconciliation: From Budgeted Contrubution to Actual Contribution.

	Favourable	Adverse	Total
	€	€	€
Total Budgeted Contribution			**199,950**
Variances			
Sales Price		-8,000	
Sales Volume		-51,150	
Material price	3,840		
Material usage		-7,680	
Labour rate	240		
Labour efficiency		-2,400	
Variable O/h Expenditure Variance		-1,344	
Variable O/h Efficiency Variance		-4,000	
	4,080 F	-74,574 A	**-70,494** A
Actual Contribution			**129,456**

(b) If standard costs and budgets are based on ideal conditions, this can give rise to a number of problems as illustrated by the variances that arise when comparing actual results to standard costs and revenues. Examples include:

- Sales Price Variance – using ideal conditions leads to overly optimistic estimates of the budgeted sales price that may be based on genuine aspirations but should be subjected to more rigorous scrutiny before inclusion in the budget.

- Sales Volume Variance – again the budgeted figure is overly optimistic and in-depth research on customer orders and enquiries, along with comparison to figures from previous months and years should mean that the budget is more accurate and does not give rise to significant variances as it does in this case.

- Material Price Variance – in this case there is a favourable variance but this is also of concern because if the budget was prepared on the basis of ideal conditions, then such variances should not arise.

WORKINGS

(i) Sales Price Variance

(Act S. Price	-	Std S. Price)	x	Actual Sales Volume		
(€120.00	-	€125.00)	x	1,600	=	-€8,000 A

€192,000 / 1,600 = €120.00 per unit

(ii) Sales Volume PROFIT Variance

(Act Sales Qty	-	Budg Sales Qty)	x	Std PROFIT		
(1,600	-	2,150)	x	(€125.00 - €32.00)	=	-€51,150 A

(iii) Materials Price Variance

(Std P per mtr	-	Actual P per mtr)	x	Actual Qty mtr purchased		
(€1.20	-	€1.10)	x	38,400	=	€3,840 F

€42,240 / 38,400 = €1.10 per unit

(iv) Materials Usage Variance

Matls Used

[(Std Qty	x	Act units produced)	-	Act Qty]	x	Std P per kgs		
[(20	x	1,600)	-	38,400]	x	€1.20	=	-€7,680 A

as per Ques

(v) Labour Rate Variance

(Std Rate per hr	-	Act Rate per hr)	x	Actual Hours		
(€15.00	-	€14.50)	x	480	=	€240 F

€6,960 / 480 = €14.50 per hour

(vi) Labour Efficiency Variance

[(Std Hours	x	Actual units produced)	-	Actual Hrs]	x	Std Rate per hr		
(12/60	x	1,600)	-	480]	x	€15.00	=	-€2,400 A

Q 5 AUGUST 2016

(vii) Variable O/h Expenditure Variance

(Std Rate per hr	-	Act Rate per hr)	x	Actual Hours		
(€25.00	-	€27.80)	x	480	=	-€1,344 A

€13,344 / 480 hours = €27.80 per hour

(viii) Variable O/h Efficiency Variance

[(Std Hours	x	Actual units produced)	-	Actual Hrs]	x	Std Rate per hr		
(12/60	x	1,600)	-	480]	x	€25.00	=	-€4,000 A

Part (B)

Capital asset pricing model (CAPM)

The CAPM is used in estimating of the cost of equity capital or in the pricing of shares.

As a portfolio pricing theory it assumes that financial assets, in equilibrium, will be priced to produce rates of return which compensate investors for systematic risk as measured by the covariance of the assets' return with the market portfolio return (i.e. beta).

It is structured as a model that describes the relationship between risk and expected return and its proponents claim that it can be used in the pricing of risky securities.

Investors in shares require a return that provides for two elements. First, they need a return equal to the risk-free rate (usually taken to be that on government securities). Second, there is the risk premium.

In its most basic form, the rate of return on shares = Risk-free rate + Risk premium.

The rate of return on equity is assumed to be equivalent to the cost of equity (Ke) and is stated as follows:

$$Ke = rf + RP$$

To estimate the relevant risk premium on a company's equity there are two steps.

1. Step one estimates the average extra return demanded by investors above the risk-free return to induce them to buy a portfolio of average-risk level shares.
2. Step two adjusts the risk premium for a typical (average-risk level) share to suit the risk level for the particular company's shares under consideration. If the share is more risky than the average then (rm – rf) is multiplied by a risk factor greater than 1. If it is less risky it may be multiplied by a risk factor of, say, 0.8 to reduce the risk premium.

This risk factor is known as Beta (β). Beta is a measure of the volatility, or systematic risk, of a security or a portfolio in comparison to the overall market risk.

Systematic risk arises from forces outside of a firm's control such as inflation, interest rates, and Government policies. It is also called non-diversifiable or market risk. This type of risk is assessed relative to the risk of a fully diversified portfolio of securities, or the Market Portfolio

Beta is a measure of the correlation between a security's returns and changes in the market. A beta of 1 indicates that the security's price will move in tandem with the market. A beta of less than 1 means that the security will be less volatile than the market. A beta of greater than 1 indicates that the security's price will be more volatile than the market. For example, if a stock's beta is 1.2, it's theoretically 20% more volatile than the market.

Many utilities stocks have a beta of less than 1. Conversely, most high-tech, Nasdaq-based stocks have a beta of greater than 1, offering the possibility of a higher rate of return, but also posing more risk.

The CAPM was introduced in 1964 and is an extension of the earlier work of Harry Markowitz on diversification and modern portfolio theory.

The CAPM takes into account the non-diversifiable market risks or beta (β) in addition the expected return of a risk-free asset. While CAPM is accepted academically, there is empirical evidence suggesting that the model does not always work when applied to practical investment situations.

For instance, subsequent research found that the CAPM model did not always correctly categorise shares if analysed by the relationship between price and risk. It was found that shares with higher earnings yields tended to have better returns than the CAPM would have predicted. More evidence was found that contradicted the CAPM. In what is now known as the 'size effect', it was found that the shares of smaller sized companies stocks produced returns superior to those predicted by the CAPM.

Many investment practitioners are critical of the CAPM and ignore it as an approach to the pricing of shares. They claim that there are fundamental and technical factors that are not incorporated in Beta calculations.

However, In spite of its many critics, the CAPM provides a useful framework for analysing the factors that influence share price movements.