Section C

SUPPLEMENTARY QUESTIONS (WITH SOLUTIONS)

Chapter 2

Sarah started a new business on 1 June. During the first month of her business the following transactions took place:

a. Sarah opened a bank account in the name of her business and transferred £50,000 of her own money to it.

b. She borrowed £35,000 from the Commercial Loan Company and paid the money into the business bank account.

c. She paid £40,000 for a small business unit (premises).

d. She paid £3,000 for a second-hand delivery van.

e. She bought goods for resale for £10,000, paying immediately, and further goods for £20,000, on credit.

f. She sold goods, which had cost £15,000, for £25,000. £5,000 of this was cash sales and the remaining £20,000 was credit sales.

g. She paid staff wages for June totalling £500.

h. She paid £100 for petrol for the van.

i. She received £4,000 from trade debtors.

j. She paid £200 to the Commercial Loan Company as interest on the loan for the month.

Required:

Open a balance sheet for Sarah's business and show each of these transactions on it as a series of pluses and minuses to reach the position of the business as at the end of June. Ignore depreciation of the fixed assets.

Chapter 3

Lee Company has been in business for some time. The balance sheet at 31 December 20X2 was as follows:

Balance sheet as at 31 December 20X2

		£		£
Fixed assets			**Capital**	
Freehold premises		76,000	Balance at 31 December 20X2	102,000
Plant - cost	50,000			
depreciation	8,000	42,000		
Current assets			**Long-term liabilities**	
Stock in trade		23,000	Loan from Commercial	
Trade debtors		21,000	Loan Company	45,000
Cash at bank		11,000		
			Current liabilities	
			Trade creditors	26,000
		173,000		173,000

During the following year of the business (the year to 31 December 20X3), the following total transactions took place:

a. An additional item of plant was bought for £10,000, which was paid immediately.
b. The owners of the business withdrew £11,000 in cash and stock in trade which had cost £8,000.
c. Sales of £137,000 were made. This stock cost £63,000. £42,000 of these sales were for cash (immediate settlement) and the remainder were made on credit.
d. Stock in trade costing £59,000 was bought, all on credit.
e. Cash totalling £97,000 was received from trade debtors.
f. A trade debtor that owed £2,000 went bankrupt and it was clear at the end of the year that no cash would ever be forthcoming from this debtor.
g. Trade creditors were paid £61,000.
h. Electricity bills for the first nine months of the year were paid totalling £3,000. At the end of the year, the bill for the last three months of the year (£1,000) remained unpaid.
i. Wages totalling £12,000 was paid.
j. Interest on the loan of £4,000 was paid.
k. General expenses of £11,000 were paid.

You are told that:
l. The business wishes to depreciate all plant owned at the end of the year by 10% of its cost value.

Required:

Open a balance sheet for the business and enter the balances from the 31 December 20X2 balance sheet. Also open a profit and loss account. Show each of the transactions on the two statements as a series of pluses and minuses and transfer the profit or loss to the balance sheet to reach the position of the business as at 31 December 20X3.

Chapter 4

You have recently overheard the following statements:

(b) "When a company's shares are traded on the Stock Exchange and the current market price is above the nominal value of the shares, this excess is recorded by the company in the share premium account."

(c) "A 'reserve', in the context of company accounts, is an amount of cash which can legally be used to a pay a dividend to shareholders."

(d) "A bonus issue is a way of rewarding shareholders for their long-term loyalty to the company."

(e) "Accounting standards set out the basic rules on what information needs to be included in company accounts."

(f) "A public limited company is one that is owned by the government, whereas a private limited company is one that is owned by the Stock Exchange"

Required:

Comment critically on each of these statements.

Chapter 5

The following are the financial statements of Colmar Ltd for last year and this year:

Profit and loss account for the year ended 31 December:

	last year	this year
	£000	£000
Turnover	499	602
Cost of sales	335	423
Gross profit	164	179
Operating expenses	127	148
Operating profit (before interest and taxation)	37	31
Interest payable	13	22
Profit before taxation	24	9
Taxation	8	4
Profit after taxation	16	5
Dividend paid and proposed	6	5
Retained profit for the year	10	-
Retained profit brought forward from the previous year	74	84
Retained profit carried forward	84	84

Balance sheet as at 31 December:

	last year		this year	
	£000	£000	£000	£000
Fixed assets		110		125
Current assets				
Stocks	68		83	
Debtors	80		96	
Cash	6		2	
	154		181	
Creditors: amounts falling due within one year				
Creditors	(69)		(109)	
Taxation	(4)		(2)	
Dividends	(6)		(5)	
	(79)		(116)	
Net current assets		75		65
		185		190
Creditors: amounts falling due within one year				
Loan stocks		(55)		(60)
		130		130
Capital and reserves				
Ordinary shares of £0.50 each		13		13
Capital reserves		33		33
Retained profit		84		84
		130		130

[Included in operating expenses are the following depreciation charges:

Last year	£32,000
This year	£36,000

There were no disposals of fixed assets in either year.]

Required:

Prepare a cash flow statement for this year. Show workings.

Chapter 6

The balance sheet and profit and loss accounts of Crow Ltd for the current year and previous year are set out below.

Balance sheet as at 31 December

	Previous year			Current year		
	Cost	Depr'n	WDV	Cost	Depr'n	WDV
	£	£	£	£	£	£
Fixed assets						
Land and buildings	159,000	12,000	147,000	222,000	15,000	207,000
Plant and equipment	150,000	30,000	120,000	270,000	33,000	237,000
	309,000	42,000	267,000	492,000	48,000	444,000
Investments at cost			150,000			240,000
			417,000			684,000
Current assets						
Stock	165,000			195,000		
Debtors	120,000			150,000		
Bank	9,000	294,000		-	345,000	
Less *Creditors due within one year*						
Creditors	120,000			180,000		
Proposed dividend	60,000			60,000		
Bank	-	180,000		12,000	252,000	
			114,000			93,000
			531,000			777,000
Less *Creditors due beyond one year*						
8% Loan stock			300,000			450,000
			231,000			327,000
Capital and reserves						
£0.50 Ordinary shares			120,000			150,000
Share premium			36,000			39,000
Revaluation reserve			-			63,000
Retained profit			75,000			75,000
			231,000			327,000

Profit and loss account for the year to 31 December

	Previous year	Current year
	£	£
Sales	600,000	600,000
Cost of sales	(300,000)	(360,000)
Gross profit	300,000	240,000
Expenses	(180,000)	(180,000)
Net profit	120,000	60,000
Dividends	(60,000)	(60,000)
Retained profit for year	60,000	-

Required:

Using appropriate ratios, evaluate the changes in the financial position and performance of the business as revealed by the financial statements.

Chapter 7

(a) Rennes Ltd provides a single standard service. The business's results for the past two months are as follows:

	April	May
Sales (units of the service)	500	620
Sales (£)	25,000	31,000
Operating profit (£)	10,000	14,800

There were no changes, of any description, in selling prices or costs over the two months.

Required:

What is the break-even point for the business's activities?

(b)

Required:

What benefit will it be for the management of Rennes Ltd

(i) to carry out the analysis required in part (a) and

(ii) to know its break-even point?

(c) Lorient plc has three products all of which require the same production facilities. Financial data on the three products are as follows:

Product		X £ per unit	Y £ per unit	Z £ per unit
Labour:	skilled	10	15	20
	unskilled	3	6	3
Materials		9	12	15
Variable overheads		8	12	16
Share of fixed overheads		10	15	20

All three of the products use just one raw material, which is the same material for all three products. This material costs £12 per kilo and is scarce, such that the amount of all three products that can be produced falls well below the amounts that the market would take. All labour is a variable cost.

Product X is sold in a market where the selling price per unit is fixed at £60.

Required:

Show, with workings and explanations, the price at which the business would need to sell products Y and Z such that it would be equally profitable to produce and sell any one of the three products.

Chapter 8

You have been asked to suggest a method of deducing the full cost of various production orders of Patel Ltd. This basis will be used as a basis for setting prices. The production orders vary greatly in size and nature from one to the next.

The following information has been taken from the budget for the forthcoming financial year:

Direct labour hours	100,000 hours
Machine hours	90,000 hours
	£
Manufacturing costs:	
Power	40,000
Direct materials	200,000
Machine maintenance and repairs	38,000
Factory heat and light	4,000
Lubricants and cleaning materials	6,000
Direct labour	600,000
Depreciation: factory buildings	130,000
machinery	402,000
Indirect labour	100,000
	1,520,000

The business is not departmentalised for accounting purposes.

All direct labour is paid the same hourly rate.

Required:

(a) Calculate two feasible overhead rates for the year.

(b) Prepare full costings for Order No 101 **using each of the rates** calculated in (a).

The cost sheet for Order No 101 shows the following:

Raw materials	£5,000
Direct labour hours	4,000 hours
Machine hours	1,900 hours.

(c) State briefly which of the two bases of overheads you prefer and why.

How might you improve on the two possible costs that you derived in (b) by taking a slightly different approach?

Chapter 9

Seine Products Ltd, a new manufacturing business started production on 1 January. Sales are planned to start in February and to be as follows for the rest of the year:

	Sales units
February	400
March	500
April	600
May	700
June	800
July	900
August	800
September	800
October	700
November	600
December	500

The selling price per unit will be £100.

All sales will be made on credit. The business plans to offer a cash discount of 2% of the amount owed to those customers who pay by the end of the month of sale. Customers for half of all units sold are expected to qualify for the discount. For the remaining half of the units sold, customers for 95% are expected to pay during the month following the sale. The remainder is expected to be bad debts.

It is planned that sufficient finished goods stock for each month's sales should be available at the end of the previous month.

Raw material purchases will be such that there will be sufficient raw materials stock available at the end of each month precisely to meet the following month's planned production. This planned policy will operate from the end of January. Purchases of raw materials will be on two months' credit. The cost of raw material is £40 per unit of finished product.

The direct labour cost, which is variable with the level of production, is planned to be £20 per unit of finished production.

Production overheads are planned to be £20,000 each month, including £3,000 for depreciation.

Non-production overheads are planned to be £11,000 per month of which £1,000 will be depreciation.

Various fixed assets costing £250,000 will be bought and paid for during January.

Except where specified, assume that all payments take place in the same month as the cost is incurred.

The business will raise £300,000 in cash from a share issue in January.

Required:

Draw up a cash budget for the six months from 1 January to 30 June, with a column for each month. The budget should, among other things, show each end-of-month cash balance.

Show all workings

Chapter 10

The product development department of Dolly plc is contemplating renting a factory building on a four-year lease from 1 January 20X1, investing in some new plant and using it to produce a new product, code named GS7.

Since there appears to be no possibility of the plant continuing to be economically viable beyond a four-year life, it has been decided to assess the new product over a four-year manufacturing and sales life.

Under the lease, the business will pay £100,000 annually in advance on 1 January.

The plant is expected to cost £600,000. This will be bought and paid for on 31 December 20X0 and is expected to be scrapped (zero proceeds) on 31 December 20X4. The business will depreciate this asset, in its financial statements, on a straight-line basis (25% each year).

Each unit of GS7 is estimated to give rise to a variable labour cost of £200 and a variable material cost of £100. GS7 manufacture will be charged with an annual share of the business's administrative costs, totalling £150,000 each year. Manufacture and sales of GS7s are expected to increase total administrative costs by £90,000 each year.

Manufacture and sales of GS7s are expected to be as follows:

Year ending 31 December	Year	Units of GS7
	20X1	400
	20X2	600
	20X3	500
	20X4	200

These will be sold for an estimated £1,400 each.

The business will need to support the manufacture and sales of the product with working capital. This has been estimated at an amount equivalent to £100 per unit of the product sold each year. This working capital would need to be in place by the beginning of the relevant year of production and sales and reduced to zero by the end of 20X4.

The business's accounting year end is 31 December each year.

It has been decided, given the level of risk involved with the project to use a discount rate of 15% a year.

Required:

(a) Identify the annual net relevant cash flows and use this information to assess the project on a net present value basis at 1 January 20X1.

(b) Estimate the internal rate of return of the project.

Chapter 11

International Consolidated plc is a large conglomerate that owns a number of subsidiary companies. One subsidiary – Magpie Ltd – produce a graphite tennis racquet that has been reasonably successful but sales have remained stable in recent years. Financial data relating to the racquet is as follows:

	£	£
Selling price		40
Variable cost	30	
Fixed cost apportionment	5	35
Net profit		5

The business has recently been approached by a large supermarket that wishes to buy 30,000 racquets each year but has demanded that the business allows four months credit. The business is concerned that if the demand is accepted, its other customers, which are allowed only one month's credit, will make similar demands. The current level of sales is 120,000 racquets each year. If the supermarket order is accepted, 10,000 extra racquets will have to be held in stock (where stock is valued at total cost) and trade creditors will increase by £ 350,000. The business expects a return of 25 per cent on it net capital invested.

Required:

Assess the acceptability of the offer made by the supermarket to Magpie Ltd on the basis that:

(a) all customers will receive a credit period of four months; and

(b) only the supermarket will receive a four-month credit period.

Chapter 12

(a)

Required:

Why do companies make 'rights' issues of equity, rather than raising the equity in some other way?

(b) Memphis plc has issued ordinary shares of 20 million £0.10 shares. On 7 June the Stock Exchange closing price of the shares was £1.20. Early on the morning of 8 June, the business publicly announced that it had just secured a new contract to build some hospitals in the Middle East. To the business the contract had a net present value of £4 million. On 29 June the business announced its intention to raise the necessary money to finance the work, totalling £10 million, through a rights issue priced at £0.80 per share.

Required:

Determine for how much, in theory, a shareholder could sell the right to buy one of the new shares.

Assume that the events described above were the only influence on the share price.

(c) The directors of Memphis plc (see (b) above) are reconsidering their decision on the rights issue price. They are now contemplating an issue price of £1 per new share. One of their concerns is the effect that the issue price will have on the wealth of the existing shareholders. You have been asked to advise.

Required:

Calculate the effect on the wealth of a person who owns 200 shares in Memphis plc before the rights issue assuming in turn a rights issue price of £0.80 and £1.00, in each case both on the basis that the shareholder takes up the rights and that the shareholder sells the rights.

Taking account of all of the factors, advise the business to do about the rights issue price?

SOLUTIONS

Chapter 2

Balance sheet as at the end of June

Assets	**£**	**Claims**	**£**
Bank account (+50,000**a** +35,000**b** –40,000**c** – 3,000**d** – 10,000**e** +5,000**f** –500**g** – 100**h** +4,000**i** –200**j**)	40,200	Capital (+50,000**a** –15,000**f** +5,000**f** +20,000**f** –500**g** –100**h** –200**j**)	59,200
Business unit (+40,000**c**)	40,000	Long-term creditor – Commercial Loan Company (+35,000**b**)	35,000
Motor van (+3,000**d**)	3,000	- Trade creditors (+20,000**e**)	20,000
Stock-in-trade (+10,000**e** +20,000**e** –15,000**f**)	15,000		
Trade debtors (+20,000**f** –4,000**i**)	16,000		
	114,200		114,200

Chapter 3

Balance sheet as at 31 December 20X3

		£		£
Fixed assets			**Capital**	
Freehold premises (+76,000)		76,000	(+102,000 –11,000**b** –8,000**b** +35,000**m**)	118,000
Plant - cost (+50,000 +10,000**a**)	60,000			
depreciation (+8,000 +6,000**l**)	14,000	46,000		
Current assets			**Long-term liabilities**	
Stock in trade (+23,000 –8,000**b** –63,000**c** + 59,000**d**)		11,000	Loan from Commercial Loan Company (+45,000)	45,000
Trade debtors (+21,000 +95,000**c** –97,000**e** –2,000**f**)		17,000		
Cash at bank (+11,000 –10,000**a** –11,000**b** +42,000**c** +97,000**e** –61,000**g** –3,000**h** –12,000**i**-4,000**j** –11,000**k**)		38,000		
			Current liabilities	
			Trade creditors (+26,000 +59,000**d** –61,000**g**)	24,000
			Accrued expenses (+1,000**h**)	1,000
		188,000		188,000

Profit and loss account for the year ended 31 December 20X3

		£
Sales (+42,000**c** +95.000**c**)		137,000
less: Cost of stock sold (–63,000**c**)		63,000
Gross profit		74,000
less:		
Bad debts (-2,000**f**)	2,000	
Wages (-12,000**i**)	12,000	
Electricity (-3,000**h** -1,000**h**)	4,000	
Loan interest (-4,000**j**)	4,000	

General expenses (-11,000**k**)	11,000	
Plant depreciation (-6,000**l**)	6,000	
		39,000
Net profit for the year		+£35,000**m**

Chapter 4

(a) The price at which shares are traded on the Stock Exchange (SE) has no direct effect on the company concerned. The SE is simply a market in which shareholders can sell their shares to other people or organisations, who then replace them as part owners of the business. The price paid by the buyer is paid to the seller – the company is simply not involved in the transaction. The transaction involves a transfer of existing shares from one owner to another.

It is only when a company issues new shares, for a price above their nominal or par value, that an increase in the company's share premium account arises. When a company issues new shares for cash, it is directly involved in the transaction receiving the cash. Here we are talking about shares that have only just come in to existence.

(b) A reserve is part of the owners' (shareholders') claim against the company, that is to say that it is part of the owners capital. It arises from profits or gains made by the company, rather than from issuing shares (share capital and, possibly, share premium). Since reserves are claims and cash is an asset, reserves cannot be cash. It is legal for a company to pay an amount of dividend equal in amount to its *revenue* reserves. Revenue reserves are that part of the reserves that arise from normal trading profit and from any profit made on disposals of fixed assets. That part of a company's reserves that are not revenue reserves are *capital* reserves. Capital reserves include both the share premium account and any 'gains' made from upward revaluation of the company's assets.

(c) A bonus issue is the conversion of reserves (capital and/or revenue) into shares. This is simply taking one part of the shareholders' claim against the company and transferring it into another part. It is really just an accounting adjustment, without economic effect. It does not make the shareholders any better off, so it is not a reward. Since a bonus share issue must apply to all shareholders, irrespective of how long they have held their shares, it may well be made to shareholders who have only recently acquired their shares. Thus it does not just apply to long-term shareholders.

(d) This is not true. The basic rules on accounting disclosure are set out in the companies acts, that is by law. The accounting standards tend to support and clarify the legal requirements in a variety of areas where the law leaves room for uncertainty in what exactly companies need do to comply with it. Accounting standards in the UK are established by the accounting profession.

(e) A public limited company (plc) is a limited company that can offer its shares to the general public – though it does not have to do this. A private limited company (Ltd) cannot offer its shares to the general public. It is a simple matter for either of these types of company to transform itself into the other type. The particular identity of the shareholders does not make a specific company either plc or Ltd.

The Stock Exchange (SE) is a market for shares and loan stocks of plcs and other organisations, it does not own shares in companies.

Chapter 5

Cash flow statement for the year ended 31 December this year

	£000	£000
Net cash inflows from operating activities (see calculation below)		76
Returns from investment and servicing of finance		
Interest paid	(22)	
Net cash outflow from returns on investment and servicing of finance		(22) -
Taxation		
Corporation tax paid (4 + 2)	(6)	
Net cash outflow for taxation		(6)
Capital expenditure		
Fixed assets [125 - (110 - 36)]	(51)	
Net cash outflow for capital expenditure		(51) (3)
Equity dividends paid		
Dividends paid	(6)	
Net cash outflow for equity dividends paid		(6) (9)
Management of liquid resources		
Financing		
Additional loan stocks (60 - 55)	5	
Net cash inflow from financing		5
Net reduction in cash (6 – 2)		(4)

Calculation of net cash inflow from operating activities

		£000	**£000**
Net operating profit			31
Add: Depreciation			36
			67
Less:	Increase in stocks (83 – 68)	15	
	Increase in debtors (96 - 80)	16	31
			36
Add:	Increase in creditors (109 - 69)		40
			76

Chapter 6

		Previous year		Current year
Return on ordinary shareholders funds				
Profit available to shareholders / Share capital plus reserves x 100%	(120/231) x 100%	51.95%	(60/327) x 100%	18.35%
Average collection period for debtors				
Debtors / Credit sales x 365	(120/600) x 365	73 days	(150/600) x 365	91 days
Stock turnover period				
Stock / Cost of sales x 365	(165/300) x 365	201 days	(195/360) x 365	198 days
Current ratio				
Current assets / Current liabilities	294/180	1.6	345/252	1.4
Acid test ratio				
Current assets - less stock / Current liabilities	129/180	0.7	150/252	0.60
Gross profit margin				
Gross profit / Sales x 100%	(300/600) x 100%	50.00%	(240/600) x 100%	40.00%
Net profit margin				
Net profit / Sales x 100%	(120/600) x 100%	20.00%	(60/600) x 100%	10.00%
Dividend cover				
Profit available for dividend / Dividends	120/60	2.00T	60/60	1.00T
Gearing ratio				
Total long-term borrowings / Share capital plus reserves + Long-term borrowings x 100%	[300/(231 + 300)] x 100%	56.50%	[(450/(327 + 450)] x 100%	57.92%

The ratios reveal that there has been a 10 per cent reduction in the gross profit margin. Although annual sales have remained constant over the two-year period, there has been a significant increase in the cost of sales during the current year. Annual expenses have remained unchanged over the two-year period and so the decline in gross profit margin is has been reflected in a similar decline in the net profit margin.

The fall in net profit margin, combined with an increase in the ordinary shareholders funds, has resulted in a sharp decline in the return on ordinary shareholders funds in the current year. However, this decline is partly due to an accounting policy change. We can see from the balance sheet for the current year that there has been a revaluation of land and buildings and this has resulted in a large revaluation reserve being created, which in turn has had a significant effect on the amount of shareholders funds reported in the accounts.

This accounting policy change has also had an impact on the gearing ratio for the current period. Despite a sharp increase in the amount of outside borrowing, the

gearing ratio has not changed significantly because of the increase in shareholders funds, which is partly due to the newly-created revaluation reserve. In view of the effect on key ratios, it might be more appropriate to eliminate the effect of the asset revaluation in the current year's account when computing the ratios. The revised ratios may enable more meaningful comparisons.

Despite the fall in both profits and profitability in the current year, dividends have remained constant over the two-year period. This has led to a sharp decline in the dividend cover ratio in the current year to the extent that profits generated now exactly match the dividends paid. The prudence of the dividend policy must be open to question unless the directors are confident that the fortunes of the business will soon be turned around.

There has been a slight decline in liquidity, as revealed by the current ratio and acid-test ratio, although there may be no real cause for concern. The increase in the average collection period for debtors is, however, an area that requires explanation. Is this due to poor credit control? The stock turnover period has changed little over the two-year period, but seems very high and also requires explanation.

Chapter 7

(a)

Sales price per unit = £25,000/500 or £31,000/620 = £50.

Total costs for April = £25,000 – 10,000 = £15,000.
Total costs for May = £31,000 – 14,800 = £16,200.

Variable cost per unit = (£16,200 - 15,000)/(620 - 500) = £10
(This is because the only reason for an increase in the costs is the increased variable costs arising from the higher volume.)

Fixed costs = Total cost – variable costs = [£15,000 - (500 x £10)] (for April) or [£16,200 - (620 x £10)] (for May) = £10,000 per month.

Break-even point = £10,000/(£50 - 10) = 250 units per month.

(b)

Knowledge of the relationship between FC, VC and SR will aid planning and assessment of the future.

BE will enable some risk assessment to be undertaken.

(c)

The products will be equally profitable where the contribution per unit of scarce resource is equal.

Contribution per unit Product X is = £60 - (10 + 3 + 9 + 8) = £30.

Amount of scarce resource per X = 9/12 = 0.75kg

Contribution per kg = £30/0.75 = £40

		Product Y	Product Z
Usage of scarce resource		12/12 = 1kg	15/12 = 1.25kg
Required contribution		1 x £40 = £40	1.25 x £40 = £50
Required price	40 + 15 + 6 + 12 + 12 = £85		50 + 20 + 3 + 15 + 16 = £104

Chapter 8

Patel Ltd

(a)
Total costs less direct costs = overheads:

			£
Total costs			1,520,000
Less direct costs	materials	200,000	
	labour	600,000	
			800,000
Total overheads			720,000

Direct labour hour (DLH) rate of overhead recovery = £720,000/100,000 = £7.20

Machine hour (MH) rate of overhead recovery = £720,000/90,000 = £8.00

(b)
Order No 101 (using DLH basis)

		£
Direct costs:	materials	5,000
	labour 4,000 x (£600,000/100,000)	24,000
		29,000
Overheads 4,000 x £7.20		28,800
		57,800

Order No 101 (using MH basis)

		£
Direct costs:	materials	5,000
	labour 4,000 x (£600,000/100,000)	24,000
		29,000
Overheads 1,900 x £8.00		15,200
		44,200

Since the overheads are dominated by machine related costs (power, maintenance, depreciation and so on) it could be argued that the machine hour basis gives more relevant costs.

An alternative, to choosing one basis or the other, might be to take those overhead costs that are machine related (power and so on) and deal with these on a machine hour basis and deal with those more related to people (for example, light and heat) on a direct labour hour basis.

Time based methods of dealing with overheads tend to be popular because most, if not all, overheads tend themselves to be time related, for example, depreciation is normally twice as much over two hours as it is over one hour.

Chapter 9

Seine Products Ltd

Cash budget for the six months ending 30 June

		Jan	Feb	Mar	Apr	May	June
Inflows	£	£	£	£	£	£	
Share issue		300,000					
Debtors: current month		zero	19,600	24,500	29,400	34,300	39,200
prior month		zero	zero	19,000	23,750	28,500	33,250
		300,000	19,600	43,500	53,150	62,800	72,450
Outflows							
Payments to creditors		zero	zero	26,000	24,000	28,000	32,000
Labour		8,000	10,000	12,000	14,000	16,000	18,000
Overheads:							
Production		17,000	17,000	17,000	17,000	17,000	17,000
Non-production		10,000	10,000	10,000	10,000	10,000	10,000
Fixed assets		250,000					
Total outflows		285,000	37,000	65,000	65,000	71,000	77,000
Net inflows /(outflows)		15,000	(17,400)	(21,500)	11,850	(8,200)	(4,550)
Balance c/fwd		15,000	(2,400)	(23,900)	(12,050)	(20,250)	(24,800)

Workings

Finished goods stock budget for the six months ending 30 June (in units of production).

	Jan units	Feb units	Mar units	Apr units	May units	June units
Opening stock	zero	400	500	600	700	800
Production	400	500	600	700	800	900
	400	900	1,100	1,300	1,500	1,700
less: Sales		400	500	600	700	800
Closing stock	400	500	600	700	800	900

Raw materials stock budget for the six months ending 30 June (in units).

	Jan units	Feb units	Mar units	Apr units	May units	June units
Opening stock	zero	500	600	700	800	900
Purchases	900	600	700	800	900	800
	900	1,100	1,300	1,500	1,700	1,700
less: Production	400	500	600	700	800	900
Closing stock	500	600	700	800	900	800

Chapter 10

(a) Assessment of the GS7 project

Year	20X0	20X1	20X2	20X3	20X4
	£000	£000	£000	£000	£000
Lease	(100)	(100)	(100)	(100)	-
Plant	(600)				
Contributions		440	660	550	220
Admin costs		(90)	(90)	(90)	(90)
Working capital	(40)	(20)	10	30	20
	(740)	230	480	390	150
Present values	(740)	200	363	256	86

Net present value 165

Since the NPV is significantly positive, the project should be undertaken.

(b) Internal rate of return - the discount rate that gives a zero NPV

This lies above 15% (because NPV is positive at a discount rate of 15%), try 25%:

Year	20X0	20X1	20X2	20X3	20X4
	£000	£000	£000	£000	£000
	(740)	230	480	390	150
Present values	(740)	184	307	200	61

Net present value (12)

So an increase in the discount rate of 10% (from 15% to 25%) leads to a change in the NPV of £153,000 (from plus £165,000 to plus £12,000). This is about £15,300 for each 1% (that is, £252,000/10).

So to reduce the NPV from £12,000 to zero would require an increase in the discount rate by about 0.8% (that is 12,000/15,300). Therefore the internal rate of return is about 25.8% (that is, 25 + 0.8%).

Workings

Contribution per unit = £1,400 - 100 - 200 = £1,100

Chapter 11

The contribution per unit from the additional sales is £10 (that is, £40 - £30). Thus by selling an additional 30,000 racquets, the business will increase its total contribution (and total profit) by £300,000 (that is 30,000 x £10).

(a) In the situation where all customers will receive a credit period of four months, the extra investment that is needed will be as follows:

	£
Increase in stocks held (10,000 x £35)	350,000
Increase in trade debtors	
[(120,000 x £40) x 3/12]	1,200,000
[(30,000 x £40 x 4/12}	400,000
	1,950,000
Less Increase in trade creditors	350,000
Increase in working capital	1,600,000
Return on investment (300,000/1,600,000)	18.75%

(b) In the situation where only the supermarket will be granted a credit period of four months, the extra investment that is needed will be as follows:

	£
Increase in stocks held (10,000 x £35)	350,000
Increase in trade debtors [(30,000 x £40 x 4/12}	400,000
	750,000
Less Increase in trade creditors	350,000
Increase in working capital	400,000
Return on investment (300,000/400,000)	75.00%

Thus, the supermarket demands are acceptable only if it is possible to grant the increased credit period to the supermarket and not to existing customers. If existing customers are also give extra time to pay, the required return on investment will not be met.

Chapter 12

(a) Businesses make rights issues in preference to public issues for the following reasons:

- Cost - rights issues are much cheaper in terms of issue costs.
- Dilution of control - rights issue tend to be taken up by the shareholders thus the balance on control is not upset by the issue.
- Avoiding the issue price problem - the price at which rights issues are made does not matter, in that it does not affect shareholders' wealth.
- Small risk of failure - provided that rights issue are sensibly priced (that is, a good discount) they are unlikely to fail.
-

(b) **Memphis plc**

Pre-contract announcement value of the business	20m x £1.20	£24m
NPV of the contract		4
Pre-rights value of the business		28
Rights issue (number of shares = £10m/£0.80)	12.5	10
Post rights value of the business	32.5	38
Ex-rights price per share	£38m/32.5m =	£1.1692

The right to buy one of the new shares would theoretically costs £0.3692 each, because a buyer could pay this amount for the right to pay the business a further £0.80 and obtain a share worth £1.1692.

(c) **Memphis plc**

Assuming a rights issue price of £0.80

From the solution to (b) at this price the rights issue is on a five-for-eight basis (that is, 12.5 m new shares to be issued to holders of an existing 20m shares).

The shareholder takes up the rights issue

Value of the shareholding before the rights issue =	200 x (£28m/20m) =	£280
Cash spent to buy the new shares =	125 x £0.80	100
Total wealth invested in Memphis plc		£380
Value of shares after the rights issue 325 x £1.1692 =		£380

The shareholder sells the rights

Value of the shareholding before the rights issue =	200 x (£28m/20m) =	£280
Value of shares after the rights issue =	200 x £1.1692 =	£233.85
Cash received for the rights = 125 x £0.3692 (Part (b) solution)		46.15
		£280.00

Thus at the rights issue price of £0.80 each, the shareholder's wealth is not affected by a decision to taking up the rights or selling them.

Assuming a rights issue price of £1.00

At this price it would require a rights issue of 10 million shares to raise the £10 million (that is, a one-for-two issue).

The shareholder takes up the rights issue

Value of the shareholding before the rights issue =	200 x (£28m/20m) =	£280
Cash spent to buy the new shares =	100 x £1.00	100
Total wealth invested in Memphis plc		£380
Value of shares after the rights issue 300 x (£38m/30 = £1.2667)	=	£380

The shareholder sells the rights

Value of the shareholding before the rights issue =	200 x (£28m/20m) =	£280
Value of shares after the rights issue = 200 x £1.2667 =		£253.33
Cash received for the rights = 100 x (£1.2667 - £1) =		26.67
		£280.00

Thus, also at the rights issue price of £1.00 each, the shareholder's wealth is not affected by a decision between taking up the rights or selling them.

From this we can conclude that the choice of rights issue price does not affect the wealth of the shareholder.

The only way in which the shareholder's wealth will be affected by the rights issue is by failure either to take up the rights or to sell them; allowing the rights to lapse (that is, doing nothing) will adversely affect the shareholder's wealth, where the rights price is at a discount to the pre-rights price.

This point is equally true irrespective of the size of the discount. Thus the issue price does not matter, in theory.

The fact that allowing the rights to lapse will be costly to shareholders puts pressure on them to take up the rights themselves or to sell them to someone who will. The greater the discount (that is, the lower the rights price), the greater the pressure. Thus £0.80 is probably a better price than £1.00 for Memphis to make its rights issue.