
Answers

1 Go Green Ltd

(a) NPV of the project	0 £'000	1 £'000	2 £'000	3 £'000	4 £'000	5 £'000
Product development costs – sunk						
Test marketing costs – sunk						
Net cash inflow – soap (w.1)		200	170	128	77	26
Net cash inflow – liquid (w.1)		209	249	285	151	45
Fixed overheads (irrelevant)						
New machinery	(500)					
Modifications	(150)					
Lost top floor income		(125)	(125)	(125)	(125)	(125)
Net cash flow	<u>(650)</u>	<u>284</u>	<u>294</u>	<u>288</u>	<u>103</u>	<u>(54)</u>
Discount factors at 10%	1.000	0.909	0.826	0.751	0.683	0.621
Present value	<u>(650)</u>	<u>258</u>	<u>243</u>	<u>216</u>	<u>70</u>	<u>(34)</u>

The net present value of the project is approximately £103,000. Since it is positive, the project should be accepted.

Working 1: Net cash inflow per unit

Soap	Year 1 £	Year 2–5 £
Sales price	1.75	1.75
Direct materials	-0.15	-0.15
Direct labour (£7.20 ÷ 60 x 2.5 for year 1)	-0.30	-0.25
Variable overheads	-0.50	-0.50
Net cash inflow per unit	<u>0.8</u>	<u>0.85</u>
Washing up liquid	£	£
Sales price	1.60	1.60
Direct materials	-0.35	-0.35
Direct labour (£7 ÷ 60 x 1.2 for year 1)	-0.14	-0.12
Variable overheads	-0.24	-0.24
Net cash inflow per unit	<u>0.87</u>	<u>0.89</u>

Working 2: Total net cash inflow per year

Soap	1	2	3	4	5
Sales in units ('000)	250	200	150	90	30
Net cash inflow per W.1	0.80	0.85	0.85	0.85	0.85
	£'000	£'000	£'000	£'000	£'000
Total net cash inflow	<u>200</u>	<u>170</u>	<u>128</u>	<u>77</u>	<u>26</u>
Washing up liquid					
Sales in units ('000)	240	280	320	170	50
Net cash inflow per W.1	0.87	0.89	0.89	0.89	0.89
	£'000	£'000	£'000	£'000	£'000
Total net cash inflow	<u>209</u>	<u>249</u>	<u>285</u>	<u>151</u>	<u>45</u>

Alternatively, the answer may have been presented as follows, although it would have been more time effective to adopt the former approach.

	0	Year				
	£'000	1	2	3	4	5
		£'000	£'000	£'000	£'000	£'000
Product development costs (sunk)						
Test marketing costs (sunk)						
Sales: soap		438	350	263	158	53
– washing up liquid		384	448	512	272	80
Direct materials: soap		(38)	(30)	(23)	(14)	(5)
– washing up liquid		(84)	(98)	(112)	(60)	(18)
Direct labour: soap (w.1)		(75)	(50)	(38)	(23)	(8)
– washing up liquid (w.1)		(34)	(34)	(38)	(20)	(6)
Variable overheads: soap		(125)	(100)	(75)	(45)	(15)
– washing up liquid		(58)	(67)	(77)	(41)	(12)
Fixed overheads (irrelevant)						
New machinery	(500)					
Modifications	(150)					
Lost top floor income		(125)	(125)	(125)	(125)	(125)
Net cash flow	(650)	283	294	287	102	(56)
Discount factors at 10%	1.000	0.909	0.826	0.751	0.683	0.621
Present value	(650)	257	243	216	70	(35)

The net present value of the project is approximately £101,000. The difference in NPV compared to the former method used arises because of rounding differences.

Working 1: Direct labour

Soap: cost per unit in year 1 = £7.20 ÷ 60 x 2.5 = £0.30

	1	2	3	4	5
Sales in units	250	200	150	90	30
Cost per unit	0.3	0.25	0.25	0.25	0.25
	£'000	£'000	£'000	£'000	£'000
Annual cost	75	50	37.5	22.5	7.5

Liquid: cost per unit in year 1 = £7 ÷ 60 x 1.2 = £0.14

	1	2	3	4	5
Sales in units	240	280	320	170	50
Cost per unit	0.14	0.12	0.12	0.12	0.12
	£'000	£'000	£'000	£'000	£'000
Annual cost	33.6	33.6	38.4	20.4	6

(b) IRR of the project

	0	Time				
	£	1	2	3	4	5
		£	£	£	£	£
Net cash flow	(650)	284	294	288	103	(54)
Discount factors at 20%	1.000	0.833	0.694	0.579	0.482	0.402
Present value	(650)	237	204	167	50	(22)

The net present value of the project at a discount rate of 20% is approximately £(14,000).

$IRR \approx A + \left(\frac{a}{a-b} \times [B-A] \right)$ Where A is the lower rate and B is the higher rate; a is the NPV at the lower rate and b is the NPV at the higher rate.

$$IRR \approx 10 + \left(\frac{103}{117} \times [20 - 10] \right)$$

$$= 18.655\%$$

$$= 18.803\%$$

(c) Discounted payback period

Time	Annual discounted cash flows £'000	Cumulative discounted cash flows £'000
0	(650)	(650)
1	258	(392)
2	243	(149)
3	216	67
4	70	137
5	(34)	104

The discounted payback period for the project is between two and three years. This means that the project will have recovered its capital outlay at this point.

Since the company accepts projects with a discounted payback period of three years or less, the company should accept the project.

(d) Factors to consider

Purpose of the borrowing

If the cash is required to fund temporary shortfalls in cash, it is easier and more appropriate to obtain an overdraft. This is because an overdraft is more flexible and can be increased or decreased (within its limit) on a day-to-day basis. The main purpose of an overdraft is to fund day-to-day shortfalls in cash rather than long-term projects.

A loan, on the other hand, is more suitable for a fixed asset investment, the benefits of which will accrue over a number of years.

Duration of the borrowing

This links in closely with the purpose of the borrowing. If the cash is needed for a long time, a loan should be sought. Conversely, if the cash is only needed for a short time, an overdraft is more appropriate since this can be paid back just as soon as the business can afford it. This means that the business only has to pay interest for as long as the borrowing is really required, rather than interest being payable for the whole term of the loan.

Interest rates

The interest rates payable on an overdraft are often higher than the interest rates payable on a loan. This is because an overdraft is such a flexible arrangement and that flexibility comes at a cost. A business will want to minimise the interest that it pays out.

Security

This factor needs to be considered from two angles. Firstly, the bank will probably require security for a medium-term loan. If the business has no security to offer then it may not be able to obtain the loan. An overdraft is more easily obtained without security. This is because the bank can keep a close eye on the business's cash flows and immediately demand repayment of the overdraft if it has any cause for concern.

Secondly, the business may want to be secure in the knowledge that knows exactly how much its repayments will be and when they will be due cash for a number of years. It has this security with a loan, whereas, with an overdraft, the bank can demand repayment at any time.

Note: Only three factors were required.

(e) Finance for Go Green Ltd

The main reason why Go Green Ltd needs cash is to purchase the machinery costing £500,000. This is a fixed asset for which the benefits will accrue over a long period of time. This would initially indicate that a medium-term loan would be more appropriate.

A loan may be preferred by the bank since the new machinery may provide adequate security for the loan, although this depends on the potential resale value of the machinery.

A loan would probably be preferred by Go Green Ltd because, firstly, the interest costs are likely to be lower and, secondly, the bank cannot suddenly demand repayment of the money in full. This is reassuring, especially since the sales levels do not rise really high until the third year of the project.

(f) Loan Guarantee Scheme

This scheme is available to small companies with turnover of £5.6 million per annum or less. Through this scheme, the government facilitates lending to small businesses by providing security for up to 75% of the value of the loan, for loans of a maximum amount of £250,000.

Therefore, Go Green Ltd could apply for this assistance if it meets the criteria, in order to obtain a loan to assist with the costs of the machinery. This might be necessary if other security is not available i.e. if, for example, the machinery is not suitable for use as security for the loan. This may be the case if the machinery's resale value has been affected by the modifications made to it.

2 Camp Ltd

(a) Current supplier

(i) EOQ

$$EOQ = \sqrt{\frac{2CoD}{Ch}}$$

Where the Co = the cost of placing one order

D = the annual demand in units

Ch = the cost of holding one unit per annum.

$$EOQ = \sqrt{\frac{2 \times 150 \times 20,000}{9}}$$
$$= 816$$

(ii) Total cost:

Holding cost: average stock x unit holding cost
 $= (816 \div 2) \times \text{£}9 = \text{£}3,672.$

Ordering cost = number of orders x £150
Number of orders = annual demand ÷ EOQ
 $= 20,000 \div 816$
 $= 24.5$

Therefore ordering cost = £3,675 per annum.

Purchase cost = 20,000 x £35
 $= \text{£}700,000.$

Total cost for one year = £3,672 + £3,675 + £700,000
 $= \underline{\underline{\text{£}707,347}}$

(b) New supplier

(i) EOQ

$$EOQ = \sqrt{\frac{2 \times 160 \times 20,000}{12}}$$
$$= 730$$

(ii) Total cost:

Holding cost: average stock x unit holding cost
 $= (730 \div 2) \times \text{£}12 = \text{£}4,380.$

Ordering cost = number of orders x £160
Number of orders = annual demand ÷ EOQ
 $= 20,000 \div 730$
 $= 27.4$

Therefore ordering cost = £4,384 per annum.

Purchase cost = 20,000 x £34.95
 $= \text{£}699,000.$

Total cost for one year = £4,380 + £4,384 + £699,000
 $= \underline{\underline{\text{£}707,764}}$

(c) Discount

Holding cost = $(2,000 \div 2) \times \text{£}12 = \text{£}12,000.$

Ordering cost = $(20,000 \div 2,000) \times \text{£}160$
 $= \text{£}1,600.$

Purchase cost = £699,000 x 99%
 $= \text{£}692,010.$

Total cost for one year = £12,000 + £1,600 + £692,010
 $= \underline{\underline{\text{£}705,610.}}$

The discount means that it is worth changing suppliers.

(d) Non-financial factors

- Quality of Fake Ltd's wood. This may not be as good as Strong Ltd's wood, although it should be as there is very little difference in price. The new wood should be closely inspected to ensure that it is of the same thickness as the current wood.
- Reliability of Fake Ltd. Fake Ltd appears to have a shorter lead time for orders (seven days instead of 10 days) but if they are not able to send stock consistently on time, Camp Ltd may end up running out of stock. This could mean that customers go elsewhere, leading to lost revenue for the company.
- Packaging of Fake Ltd's wood. Fake Ltd's packaging needs to look attractive, otherwise customers will not buy it. In addition, it needs to protect the wood well, as the guarantee claims.
- Range. There are many different types of wood, e.g. beech, maple and oak. Camp Ltd need to ensure that all the currently stocked types of wood are on offer from the new supplier.
- Returns policy. Fake Ltd appear to offer a guarantee that the wood will arrive undamaged but Camp Ltd may still need to make returns. Fake Ltd's policy would need to be understood and the extent to which they are contactable to deal with problems would be relevant.

Note: Only three factors were required.

3 Porkys Ltd

(a) Profit forecast for the three months ending 30 September 2007

	£'000
Sales (1)	5,700
Purchases (2)	(1,140)
Labour	(1,425)
Depreciation	(13)
Profit on disposal (3)	3
Interest receivable	30
Sundry expenses	(260)
Net Profit	<u>2,895</u>

Workings

1. Sales = receipts from Sept, Oct and Nov. since the cash is received two months in arrears.
 $£1,800,000 + £2,200,000 + £1,700,000 = £5,700,000$.
2. Purchases – paid one month in arrears so use CFF figures from Aug, Sep, Oct.
Ingredients: **£'000**
 $(£360,000 + £440,000 + £340,000)$ 1,140
3. Profit on disposal – it is this revenue figure that is relevant for the profit and loss forecast, rather than the actual sale proceeds of £45,000 since this is a capital disposal.

Notes for items excluded from the profit forecast

1. Purchase of machinery – these are capital payments and are only relevant in so far as they are used to calculate depreciation.
2. Loan repayments – ignored since these are capital in nature, not revenue.

(b) Roles of a treasury department

- banking
- cash management
- funding management
- foreign currency management
- corporate finance
- risk management
- insurance

Note: Only four were required.

(c) Advantages of a centralised treasury department

- higher interest rates may be attainable on investments because the department has larger amounts of cash available for investment.
- experts can be employed with specialised knowledge, more qualified to make manage risk and make better investment decisions.

- foreign currency management becomes easier, since the foreign currency expenditure in one company can be matched with receipts in the same currency in another group company.
- lower interest rates may be sought for borrowing, since borrowing can be arranged for the group as a whole.
- the level of cash held for precautionary purposes can be minimised since only one amount will be required for the whole group.
- the treasury department may be a profit centre in its own right, resulting in an increased likelihood of a profit being made.

Note: Only three advantages were required.

4 (a) Current debtors collection period

$$\begin{aligned} \text{Credit sales} &= \text{£}1,581,743 - \text{£}14,250 \\ &= \text{£}1,567,493 \end{aligned}$$

$$\begin{aligned} \text{Debtor days} &= \text{debtors/credit sales} \times 365 \\ &= (\text{£}323,654 \div \text{£}1,567,493) \times 365 \\ &= 75 \text{ days.} \end{aligned}$$

(b) Debtors needs to be reduced to:

$$\text{£}1,567,493 \times 45/365 = \text{£}193,253$$

$$\begin{aligned} \text{Debts to be collected immediately} &= \text{£}323,654 - \text{£}193,253 \\ &= \text{£}130,401. \end{aligned}$$

(c) Bad debt ratio

$$\begin{aligned} \text{Bad debt ratio} &= \text{bad debts/credit sales} \times 100\% \\ &= \text{£}26,784 \div \text{£}1,567,493 \times 100\% \\ &= 1.7\% \end{aligned}$$

(d) Procedures for collecting debts

- Telephone customers and request that they pay their debts as soon as possible, informing them if they have exceeded their credit period.
- Write to customers, enclosing a copy of their most recent statement showing all their outstanding invoices.
- Arrange a personal visit to customers' premises so that you can discuss the need for payment and any reasons for non-payment.
- Freeze customers' accounts so that they are forced to pay before they can order more goods.
- Send customers formal warnings or final demands, stating that if their debts are not paid, further action will be taken, and stating what that further action is.
- Refer the debts to a debt collection agency who will pursue debts on the company's behalf.
- Arrange for your solicitor to send your overdue customers a letter stating that if payment is not received within a certain period, legal proceedings will be commenced.
- Commence legal proceedings i.e. issue a summons or a writ (depending on the amount of the debt).

Note: Only five were required.

(e) Arbitration is the process whereby a debtor and a creditor enter into a written agreement to submit their dispute to a third party who assists in its resolution. The parties produce all relevant documents to the arbitrator and are then examined under oath. The decision of the arbitrator is final.

(f) Advantages

- less costly than court action
- more flexible

Disadvantages

- arbitrator's powers not as extensive as a judge's powers in court.
- arbitrator's decision not as objective, since case not examined in same level of detail, or according to the rules of evidence in court.

(g) Liquidation

The company is dissolved as a legal entity. Its assets are then sold to raise cash, which is used to pay creditors. Any money left over (usually none!) is then given to the shareholders.

		Marks		
1 (a) NPV	Ignoring development costs	1	(Alternative method)	
	Ignoring test marketing costs	1	Ignoring development costs	1
	Net cash inflow – soap: sales fig.	1	Ignoring test marketing costs	1
	Direct materials	1	Sales: soap	1
	Direct labour	2	– washing up liquid	1
	Variable overheads	1	Direct materials: soap	1
	Net cash inflow – WUL: sales fig.	1	– washing up liquid	1
	Direct materials	1	Direct labour: soap	2
	Direct labour	2	– washing up liquid	2
	Variable overheads	1	Variable overheads: soap	1
	Fixed overheads – ignore	1	– washing up liquid	1
	New machinery cost	1	Fixed overheads – ignore	1
	Modifications cost	1	New machinery cost	1
	Lost top floor income	1	Modifications cost	1
	Net cash flow	1	Lost top floor income	1
	Present value	1	Net cash flow	1
	NPV	1	Present value	1
	Conclusion	1	NPV	1
		<u>20</u>	Conclusion	<u>1</u>
				<u>20</u>
(b) IRR	NPV calculation at 20%	2		
	Correct IRR formula	1		
	Correct IRR calculation	<u>2</u>		
		<u>5</u>		
(c) Discounted payback	Annual cash flows	1		
	Cumulative cash flows	1		
	Discounted payback calculation	1		
	Conclusion	<u>1</u>		
		<u>4</u>		
(d) Factors	For each factor discussed	<u>2</u>		
	Total	<u>6</u>		
(e) Recommendation	Recommendation	1		
	Reasons	<u>2</u>		
		<u>3</u>		
(f) Loan guarantee scheme	What it is	1		
	How it might help.	<u>1</u>		
		<u>2</u>		
Total marks		<u><u>40</u></u>		

		Marks
2	(a) Old supplier	
	EOQ	2
	Total costs	3
		<u>5</u>
(b) New supplier	EOQ	2
	Total costs	3
		<u>5</u>
(c) Discount	Total costs	3
	Conclusion	1
		<u>4</u>
(d) Factors	Each factor	2
	Max.	6
	Total marks	<u><u>20</u></u>

3	(a) Profit and loss forecast	
	Sales (right figure)	1
	Purchases	1
	Labour	1
	Depreciation	1
	Profit on disposal: correct figure	1
	Interest receivable	1
	Sundries	1
	Forecast profit – correct figure	1
	Note on mach. purchase	1
	Note on loan repayments	1
	<u>10</u>	
(b) Roles of treasury department	Each role	1
	Max.	4
		<u>4</u>
(c) Advantages	Each advantage	2
	Max.	6
	Total marks	<u><u>20</u></u>

		Marks
4 (a) Debtors collection period	Credit sales figure	1
	Ratio calculation	<u>2</u>
		<u>3</u>
(b) Debts collected	New debtors figure	1
	Collect debtors figure	<u>1</u>
		<u>2</u>
(c) Bad debts ratio	Ratio calculation	<u>2</u>
		<u>2</u>
(d) Debt collection	Each method	<u>1</u>
	Max.	<u>5</u>
(e) Arbitration	Written agreement	1
	Under oath	1
	Binding	<u>1</u>
	Max.	<u>2</u>
(f) Advantages/disadvantages	Each one	<u>1</u>
	Max.	<u>4</u>
(g) Liquidation	Dissolved	1
	Assets sold	1
	Cash paid to creditors/SHs	<u>1</u>
	Max. marks	<u>2</u>
Total marks		<u><u>20</u></u>