KAPLAN

FINANCIAL

HKICPA 2012

HKICPA
Qualification Programme

Module B

Corporate Financing

Deloitte Touche Tohmatsu

Mock Exam

Questions

http://www.kaplanfinancial.com.hk

Professional Programme Module Examination	
Time allowed	**3 Hours**
Examination Assessment Allocation Section A – Case Questions Section B – Essay/Short Questions	 50 marks 50 marks
YOU SHOULD ANSWER ALL THE QUESTIONS IN THIS PAPER	

1/1/2013 30/6/2013

SECTION A - CASE QUESTIONS (Total: 50 marks)

Answer ALL of the following questions. Marks will be awarded for logical argumentation and appropriate presentation of the answers.

CASE

Mo Joe King (MJK) will set up a new business as a sole trader on 1 January 2013 making decorative glassware. MJK is in the process of planning the initial cash flows of the business. He estimates that there will be no sales in January 2013 so production in that month will be used to build up stocks to satisfy the expected demand in February 2013. Thereafter, it is intended to schedule production in order to build up sufficient finished goods at the end of each month to satisfy demand during the following month. Production will, however, need to be 5% higher than predicted sales due to expected defects that will have to be scrapped. Defects are only discovered at the production completion stage. The company will not hold raw materials or work in progress stocks.

As the business is new, demand is uncertain, but MJK has estimated three possible levels of demand in 2013 as follows:

	High demand	Medium demand	Low demand	
	$	$	$	
February	22,000	20,000	19,000	= 20,000
March	26,000	24,000	23,000	= 24
April	30,000	28,000	27,000	28
May	29,000	27,000	26,000	27
June	35,000	33,000	32,000	33

Demand for July 2013 onwards is expected to be the same as June 2013. The probability of occurrence of each level at each month is as follows:

High 0.05
Medium 0.85
Low 0.1

20,000 x 0.9 x 0.5 = 9,250

It is expected that 10% of the total sales will be cash sales, mainly from retail customers making small purchases. The remaining 90% of the sales will be made on two months' credit. A 2.5% discount will, however, be offered to credit customers settling within one month. It is estimated that part of the customers, representing half of credit sales by value, will take advantage of the discount while the remainder will take the full two months credit.

Variable production costs (excluding costs of rejects) per $1,000 of sales are as follows:

	$
Labour	300
Materials	200
Variable overhead	100

$\frac{20,000}{1,000} \times 300 \times 1.05$

Labour is paid in the month which labour costs are incurred. Materials are paid one month in arrears and variable overheads are paid two months in arrears. Fixed production and administration overheads, excluding depreciation, are $7,000 per month and are payable in the same month as the expenditure is incurred.

MJK employed a firm as consultants to give him initial business advice. The consultancy fee of $12,000 will be paid in February 2013. In addition, smelting machinery will be purchased on 1 January 2013 for $200,000 and payable in February 2013. Further machinery amounting to $50,000 will be purchased in March 2013 and payable in April 2013. This machinery is highly specialised and will have a low net realisable value after the purchase.

MJK has redundancy money received from his previous employment and savings totalling $150,000, which he intends to deposit into his bank account on 1 January 2013 as the initial capital of the business. He realises that this will be insufficient for his business plans, so he is intending to approach his bank for finance in the form of both a fixed term loan and an overdraft. The only asset MJK has is his house that is valued at $200,000, but he has an outstanding mortgage of $80,000 of this property.

The consultants recommended MJK that rather than accumulating sufficient stock to satisfy the following month's demand, he should not maintain any stock levels but merely produce sufficient in each month to meet the expected demand for that month.

MJK's production manager objected: 'I need to set up my production schedule based on the expected average demand for the month. I will reduce production in the month if it seems demand is low. However, there is no way production can be increased during the month to accommodate demand if it happens to be at the higher stock level that month. As a result, under this new system, there would be no stocks to fall back on and the extra sales, when monthly demand is high, would be lost, as customers require immediate delivery.' In respect of this, an assessment of the impact of the introduction of just-in-time stock management on cash flows has been made that showed as below:

	January	February	March	April	May	June
Net cash flow ($)	143,000	(223,279)	(7,587)	(50,667)	1,843	1,704
Month-end balance ($)	143,000	(80,279)	(87,866)	(138,533)	(136,690)	(134,986)

Question 1 **(50 marks – approximately 90 minutes)**

Required

(a) Prepare a monthly cash budget for MJK's business for the six month period ended 30 June 2013. Calculations should be made on the basis of the expected values of sales. The cash budget should show the net cash inflow or outflow in each month and the cumulative cash surplus or deficit at the end of each month.

For this purpose ignore bank finance and the suggested use of just-in-time stock management.

(17 marks)

(b) Assume now that just-in-time stock management is used in accordance with the recommendations of the consultants. Calculate for each of the six months ended 30 June 2013:

i. Receipts from sales; and

ii. Payments to labour.

(6 marks)

(c) Evaluate the impact for MJK of introducing just-in-time stock management. This should include an assessment of the wider implications of just-in-time stock management in the particular circumstances of MJK's business.

(10 marks)

(d) Write a report to MJK which identifies the financing needs of the company. It should consider the followings:

i. The extent of financing required;

ii. The factors that should be considered in determining the most appropriate mix of short-term financing (e.g. overdraft) and long-term financing (e.g. fixed term bank loan); and

iii. The extent to which improved working capital management (other than just-in-time stock management) might reduce the company's financing needs and describe how this might be achieved.

(17 marks)

[Total: 50 marks]

* * END OF SECTION A * *
(QUESTIONS)

SECTION B - ESSAY / SHORT QUESTIONS (Total: 50 marks)

Answer ALL of the following questions. Marks will be awarded for logical argumentation and appropriate presentation of the answers.

Question 2 **(25 marks – approximately 45 minutes)**

OML Limited is reviewing investment proposals that have been submitted by divisional managers. The investment funds of the company are limited to $800,000 in the current year. Details of three possible investments, none of which can be delayed, are given below.

Project 1

An investment of $300,000 is planned to use in workstation assessments. Each assessment would be on an individual employee basis and would lead to savings in labour costs from increased efficiency and from reduced absenteeism due to work-related illness. Savings in labour costs from these assessments in money terms are expected to be as follows:

Year	1	2	3	4	5
Cash flows ($000)	85	90	95	100	95

Project 2

An investment of $450,000 in individual workstations for staff that is expected to reduce administration costs by $140,800 per annum in money terms for the next five years.

Project 3

An investment of $400,000 is planned to use in new tickets machines. Net cash savings of $120,000 per annum are expected in current price terms and these are expected to increase by 3.6% per annum due to inflation during the five-year life of the machines.

OML has a money cost of capital of 12% and taxation should be ignored.

Required

(a) Determine the best way for OML to invest the available funds and calculate the resultant NPV:
- **i. On the assumption that each of the three projects is divisible;**
- **ii. On the assumption that none of the projects are divisible.**

(10 marks)

(b) Explain how the NPV investment appraisal method is applied in situations where capital is rationed.

(3 marks)

(c) Discuss the reasons why capital rationing may arise.

(7 marks)

(d) Discuss the meaning of the term 'relevant cash flows' in the context of investment appraisal, giving examples to illustrate your discussion.

(5 marks)

[Total: 25 marks]

Question 3 **(17 marks – approximately 31 minutes)**

In West Limited (IWL) is an on-line reseller of local craft products related to the historic culture of the country of West. The business started ten years ago as a hobby of two brothers, Jacky and Jimmy. The brothers produced humorous, short video clips about West which were posted on their website and became highly popular. They decided to use the website to try to sell West merchandise and good initial sales made them believe that they had a viable business idea.

West has gone from strength to strength and now boasts sales of $120m per annum, selling anything related to West. IWL is still very much the brothers' family business. They have gathered around themselves a number of strategic partners into a virtual company. IWL has the core functions of video clip production, finance and supplier relationship management. The rest of the functions of the organisation (warehousing, delivery and website development) are outsourced to strategic partners.

The brothers work from their family home in the rural North of West while other IWL employees work from their homes in the surrounding villages and towns. These employees are involved in video editing, system maintenance, handling customer complaints and communication with suppliers and outsourcers regarding inventory. The employees log in to IWL's systems via the national internet infrastructure. The outsourced functions are handled by multinational companies of good reputation who are based around the world. The brothers have always been fascinated by information technology and so they depend on email and electronic data interchange to communicate with their product suppliers and outsourcing partners.

Recently, there have been emails from regular customers of the IWL website complaining about slow or non-delivery of orders that they have placed. This represents a major threat to IWL as the company operates on small profit margins, relying on volume to drive the business. He believes that sales growth will drive the profitability of the business due to its cost structure.

Jacky handles the management of outsourcing and has been reviewing the contracts that exist between IWL and its strategic partner for warehousing and delivery, RLR Logistics ("RLR"). The current contract for warehousing and delivery is due for renewal in two months and currently, has the following service level agreements (SLAs):

1. RLR agree to receive and hold inventory from IWL's product suppliers.
2. RLR agree to hold 14 days inventory of IWL's products.
3. RLR agree to despatch from their warehouse any order passed from IWL within three working days, inventory allowing.
4. RLR agree to deliver to customers anywhere in West within two days of despatch.

Breaches in these SLAs may incur financial penalties on a sliding scale depending on the number and severity of the problems. Each party to the contract collects their own data on performance and this has led to disagreements in the past over whether service levels have been achieved. although no penalties have been triggered to date. The most common disagreement arises over inventory levels held by RLR with RLR claiming that it cannot be expected to deliver products that are late in arriving to warehouse due to the product suppliers' production and delivery issues.

Required

Assess the difficulties of performance measurement and performance management in complex business structures such as IWL, especially in respect of the performance of their employees and strategic partners.

(17 marks)

Question 4 (8 marks – approximately 14 minutes)

Diomed manufactures a single product with a production cost of $40 per unit which is sold to three customers. The details are:

Sales pattern:	Customer	X	10,000 units per annum
	Customer	Y	10,000 units per annum
	Customer	Z	10,000 units per annum

All sales are made at $75 per unit.

Non-production overhead is:	$
Delivery	220,000
Quality inspection	200,000
Salesmen	80,000
After sales service	100,000

These non-production overheads are currently apportioned on the basis of a rate on the production cost.

The Managing Director is concerned about sales to Customer X, and is unhappy about the current cost allocation and has asked for an analysis of Customer Profitability Analysis (CPA) based upon Activity Based Costing methods. The following period activity volumes have been identified:

Customer	X	Y	Z
No. of deliveries	2,500	50	12
No. of inspections	10,000	500	0
No. of salesmen visits	200	24	6
After sales visits	200	100	50

Required

Assess the three customers currently being served by using Customer Profitability Analysis and discuss your findings.

(8 marks)

* * END OF EXAMINATION PAPER * *
(QUESTIONS)

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Answers

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Answer 1

					Marks
(a)					
	High demand	Medium demand	Low demand	Expected demand	
	$	$	$	$	
February	22,000 x 0.05	20,000 x 0.85	19,000 x 0.1	20,000	2
March	26,000 x 0.05	24,000 x 0.85	23,000 x 0.1	24,000	
April	30,000 x 0.05	28,000 x 0.85	27,000 x 0.1	28,000	
May	29,000 x 0.05	27,000 x 0.85	26,000 x 0.1	27,000	
June	35,000 x 0.05	33,000 x 0.85	32,000 x 0.1	33,000	

	January	February	March	April	May	June	
	$	$	$	$	$	$	
Capital	150,000						1
Cash sales (W1)		2,000	2,400	2,800	2,700	3,300	
Credit sales (W1)			8,775	10,530	12,285	11,846	
(W1)				9,000	10,800	12,600	
Fixed assets		(200,000)		(50,000)			1
Labour (W2)	(6,300)	(7,560)	(8,820)	(8,505)	(10,395)	(10,395)	
Materials (W2)		(4,200)	(5,040)	(5,880)	(5,670)	(6,930)	
Overheads (W2)			(2,100)	(2,520)	(2,940)	(2,835)	
Fixed costs	(7,000)	(7,000)	(7,000)	(7,000)	(7,000)	(7,000)	1
Consultant		(12,000)					1
Net cash flow	136,700	(228,760)	(11,785)	(51,575)	(220)	586	
Bal b/d	-	136,700	(92,060)	(103,845)	(155,420)	(155,640)	1
Bal c/d	136,700	(92,060)	(103,845)	(155,420)	(155,640)	(155,054)	1

W1	January	February	March	April	May	June	
	$	$	$	$	$	$	
Cash sales (10%)		2,000	2,400	2,800	2,700	3,300	1
Credit sales							
(90% x 0.5 x 0.975)			8,775	10,530	12,285	11,846	2
(90% x 0.5)				9,000	10,800	12,600	1

W2	January	February	March	April	May	June	
	$	$	$	$	$	$	
Labour (3/6 of total cost **W3**)	6,300	7,560	8,820	8,505	10,395	10,395	1
Materials (2/6 of total cost **W3**)		4,200	5,040	5,880	5,670	6,930	1
Overheads (1/6 of total cost **W3**)			2,100	2,520	2,940	2,835	1

W3	January	February	March	April	May	June	
	$	$	$	$	$	$	
Cost of sales (60% of sales)	12,000	14,400	16,800	16,200	19,800	19,800	1
Defects (5%)	600	720	840	810	990	990	1
Total	12,600	15,120	17,640	17,010	20,790	20,790	
							17

If actual demand (high) > expected demand = lost sales

(b)

Only the cash flows for sales and labour are required. The remainder of the cash budget is provided to prove the figures supplied in the question.

The basic point is that high demand cannot be satisfied with a just-in-time stock management system. **1**

	January	February	March	April	May	June
	$	$	$	$	$	$
Capital	150,000					
Cash sales (W1)		1,990	2,390	2,790	2,690	3,290
Credit sales (W1)			8,731	10,486	12,241	11,802
(W1)				8,955	10,755	12,555
Fixed assets		(200,000)		(50,000)		
Labour (W2)		(6,269)	(7,529)	(8,789)	(8,474)	(10,364)
Materials (W2)			(4,179)	(5,019)	(5,859)	(5,649)
Overheads (W2)				(2,090)	(2,510)	(2,930)
Fixed costs	(7,000)	(7,000)	(7,000)	(7,000)	(7,000)	(7,000)
Consultant		(12,000)				
Net cash flow	143,000	(223,279)	(7,587)	(50,667)	1,843	1,704
Bal b/d	-	143,000	(80,279)	(87,866)	(138,533)	(136,690)
Bal c/d	143,000	(80,279)	(87,866)	(138,533)	(136,690)	(134,986)

Receipts from Sales:

W1	January	February	March	April	May	June
	$	$	$	$	$	$
Cash sales (10%)		1,990	2,390	2,790	2,690	3,290
Credit sales						
(90% x 0.5 x 0.975)			8,731	10,486	12,241	11,802
(90% x 0.5)				8,955	10,755	12,555

3

Payments to labour:

W2	January	February	March	April	May	June
	$	$	$	$	$	$
Labour (3/6 of total cost **W3**)		6,269	7,529	8,789	8,474	10,364
Materials (2/6 of total cost **W3**)			4,179	5,019	5,859	5,649
Overheads (1/6 of total cost **W3**)				2,090	2,510	2,930

2

W3	January	February	March	April	May	June
	$	$	$	$	$	$
Cost of sales (60% of sales)		11,940	14,340	16,740	16,140	19,740
Defects (5%)		597	717	837	807	987
Total		12,537	15,057	17,577	16,947	20,727

A quicker method is merely to deduct 63 from each of the totals in requirements (a) as the lost of sales is constant.

6

(c)

The introduction of just-in-time stock management for finished goods has a number of benefits:

(1) It significantly improves the short-term liquidity of the business with a maximum financing requirement of $138,533 rather than $155,640. There is also a more rapidly improving deficit thereafter, with the balance falling to $134,986 by the end of June. In the longer term, however, there is continued loss of profitability due to lost sales when demand is high. **2**

The primary reason for this is the reduced investment in stock that is tying up cash. Under the original proposal there is surplus stock amounting to the next month's sales which means production is necessary at an earlier stage thereby using up cash resources. **2**

(2) Interest costs and stock holding costs are saved by reduced stock levels, thereby adding to profit. **2**

(3) There already appears to be a just-in-time stock management policy with respect to raw materials and work in progress and such a policy for finished goods would be consistent with this. **2**

There are, however, a number of problems with just-in-time stock management in these circumstances:

(1) When demand is higher than expected, the additional sales are lost as there is insufficient production to accommodate demand above the mean expected level as no stock is carried. This, however, amounts to only $100 per month of sales on average, which may be a price worth paying in return for improved liquidity in terms of a reduced cash deficit. **2**

(2) In addition to losing contribution, there may be a loss of goodwill and reputation if customers cannot be supplied. They may go elsewhere not just for the current sale but also for future sales if MJK is seen as an unreliable supplier. This results from the fact that customers demand immediate delivery of orders. **2**

(3) Just-in-time management of stock relies upon not just reliable timing and quantities but also reliable quality. The number of defects can be planned if it is constant but if they occur irregularly this presents an additional problem. **2**

(4) If production in each month is to supply demand each month, this relies on the fact that demand parallels production within the month. If the majority of demand is at the beginning of each month, this would cause problems without a level of safety stock given that prompt delivery is expected by customers. **2**

A number of compromises between the two positions would be possible:

(1) Stock could be held sufficient to accommodate demand when it was high. This amounts to only an extra $2,000 at selling values, thus an extra $1,200 at variable cost. This is significantly lower than a whole month's production but would accommodate peak demand. **2**

(2) Liquidity is very important initially as the business attempts to become established. Minimal stocks could be held in the early months therefore, with perhaps slightly increased stocks once the business and its cash flows become established. **2**

Max 10

(d) (i)

To: xxx
From: xxx
Date: xxx
Subject: xxx

1

It is clear that sales are uncertain with high, low and medium estimates of demand. This of itself gives some uncertainty but the reliability and probability of these estimates will need to be established by appropriate market research. If sales are lower than expected, then any bank finance will take longer to repay, thus increasing the amount of finance needed and the proportion of longer-term finance.

1

Assuming that just-in-time stock management is not implemented, then the maximum finance requirement is $155,640.

1

After July 2013, the expected net cash inflow will be constant (ignoring any further purchases of fixed assets) as follows:

1

	$		$
Sales			33,000
Discounts (33,000 x 0.45 x 0.025)			(371)
Labour	(9,900)		
Material	(6,600)		
Variable overheads	(3,300)		
	(19,800)	x 1.05	(20,790)
Fixed costs			(7,000)
			4,839

2

Thus, to pay off a loan of $155,054, it would mean payments over 32 months (155,054 / 4,839) would have to take place, excluding interest charges. Any variation in these estimates would, however, affect the amount of the financing needed.

1

In addition to uncertain trading results affecting the amount of future financing, there is an additional requirement to finance future capital investment as the business expands. This is likely to be a major financing need in the future depending on the rate of expansion.

1

The levels of the drawings, taxation and interest charges will also extend the amount of finance needed, as these items were not included in the cash budget presented.

Max 6

(d)(ii)	
In forming a new business, there is no business history to present to the bank, thus there is additional uncertainty, which will need to be considered before any finance is likely to be forthcoming, either of a short-term or a long-term nature.	**1**
If, however, there is a good relationship with the bank, an overdraft might be possible for the entire financing requirement, but this runs the risk of being payable immediately on demand and thus, if planned cash flows did not turn out as expected, then the bank may get nervous and possibly withdraw credit facilities.	**1**
A medium-term loan would also be possible to meet the entire financing requirement. This has the advantage of security that it cannot be recalled unless there is a breach in the terms. Most likely it would come from a bank. The issue of debentures being entirely out of the question on the grounds of scale. Other considerations would be the term of the loan, security required, fixed or variable interest rates, other conditions (e.g. accounts, covenants, reviews).	**1**
Other forms of finance include leasing which can be regarded as a quasi loan if entering into a long-term contract, although other considerations may apply such as variability of rental terms, transfer of risk, residual value of asset, cancellation rights, amount of rentals, period of agreement.	**1**
A further option for MJK would be to put in more ownership capital, perhaps secured on the equity in his house.	**1**
A mixture of these various forms of finance would be most likely.	**1**
The precise mix will depend upon a number of factors (although some of these may also influence the total amount of finance needed):	
(1) The ability and willingness of MJK to supply funds initially and additionally if plans do not turn out as expected.	**1**
(2) A loan would require some security. The company has few assets to use as security as there does not appear to be any property. The machinery has a low net realisable value and there is little stock, which is normally poor security anyway. An overdraft may also require security but may place increased emphasis on the cash generating potential of the business to make appropriate repayments. Ultimately, however, this is an unlimited business and MJK's personal assets, and particularly the equity in his house, will act as security.	**1**
(3) Other costs are necessary including: the drawings of the owner, MJK and interest charges. These will reduce the ability of the business to repay any loan and thus extend the period of repayments in excess of the above estimate of 32 months.	**1**
(4) There may be more restrictive covenants in a loan agreement than an overdraft as an overdraft is repayable on demand, and thus the bank needs less protection from other clauses in the contact. There are, however, likely to be restrictive covenants in overdraft agreements.	**1**
(5) Overdraft interest is only payable on the balance outstanding, thus if major inflows occur this will reduce interest costs.	**1**
(6) The difference between short- and long-term interest rates may influence the relative charges on an overdraft or a medium-term loan.	**1**
(7) The purpose of the finance is also likely to affect the form of finance. For example, if funds are required to finance fixed assets then it might be appropriate to use long-term finance to match the long-term usage of the asset.	**1**
	Max 5

(d)(iii)

It has already been seen (in requirement (b)) that a reduction in stock due to the introduction of just-in-time stock management can improve liquidity by improving cash flows and reducing any cash deficit. The same principle can be applied to other types of working capital.

Some of the same arguments also apply, however, in that while liquidity may be improved there could be offsetting disadvantages in terms of lost profitability or increased risk.

Debtors
Giving two months' credit makes a significant level of debtors that needs financing.

In steady-state of sales of $33,000 per month, then debtors will be: **1**

One month's credit ($33k x 90% x 50% x 0.975)	14,479
Two months' credit ($33k x 90% x 50% x 2mth)	29,700
Total debtors	44,179

This is a significant proportion of the maximum financing requirement.

Whether the credit terms themselves can be changed may depend upon the credit terms of competitors when set alongside the other conditions of sale. If the business is out of line with competitors, then lost sales may result and a balance between liquidity and profitability may need to be struck. **1**

In terms of debt collection, it would appear that all debtors are expected to pay on time so there is little that can be done in this area given the current credit terms. **1**

Accelerated payment could be encouraged by a higher cash discount but this is expensive, particularly as customers who would pay within one month anyway would also receive a greater reduction in price without any benefit to the business. **1**

Invoice discounting and debt factoring may be alternatives but these are expensive and in the particular circumstances of the business, where there are expected to be no late payers or bad debts. However, it might seem inappropriate to use outside assistance. **1**

Creditors
It may be possible to delay payment to creditors in respect of materials and variable overheads. This may, however, damage relationships with suppliers and this might be significant for a new business. **1**

6

Total	**50**

Answer 2

	Marks
(a)(i)	
Project 1 — 0: $ (300,000); 1: $ 85,000; 2: $ 90,000; 3: $ 95,000; 4: $ 100,000; 5: $ 95,000	1
12%: 1; 0.893; 0.797; 0.712; 0.636; 0.567	
PV: (300,000); 75,905; 71,730; 67,640; 63,600; 53,865	
NPV 32,740	
Profitability index = ($300,000 + $32,740) ÷ $300,000 = 1.11	1
Project 2 NPV at 12% = ($140,800 x 3.605) - $450,000 = $57,584	1
Profitability index = ($450,000 + $57,584) ÷ $450,000 = 1.13	1
Project 3 — 0: $ (400,000); 1: $ 124,320; 2: $ 128,795; 3: $ 133,432; 4: $ 138,236; 5: $ 143,212	1
12%: 1; 0.893; 0.797; 0.712; 0.636; 0.567	
PV: (400,000); 111,018; 102,650; 95,004; 87,918; 81,201	
NPV 77,791	
Profitability index = ($400,000 + $77,791) ÷ $400,000 = 1.19	1
The optimum investment schedule involves investment first in Project 3 and then in Project 2.	1
NPV = $77,791 + ($57,584 x $400,000 ÷ $450,000) = $128,977	1
	8
(ii)	
As the capital is rationed and the projects are not divisible, only the following two combination will be available:	
NPV of Project 1 + 2 = $32,740 + $57,584 = $90,324	1
NPV of Project 1 + 3 = $32,740 + $77,791 = $110,531	1
The optimum investment is now Project 1 and 3.	1
	Max 2
(b)	
The NPV decision rule requires that a company invest in all projects that have a positive net present value. This assumes that sufficient funds are available for all incremental projects, which is only true in a perfect capital market.	1
When insufficient funds are available, that is when capital is rationed, projects cannot be selected by ranking by absolute NPV. Choosing a project with a large NPV may mean not choosing smaller projects that, in combination, give a higher NPV. Instead, if projects are divisible, they can be ranked using the profitability index in order to make the optimum selection.	1
If projects are not divisible, different combinations of available projects must be evaluated to select the combination with the highest NPV.	1
	3
(c)	
The NPV decision rule, to accept all projects with a positive net present value, requires the existence of a perfect capital market where access to funds for capital investment is not	

restricted. In practice, companies are likely to find that funds available for capital investment are restricted or rationed.	1
Hard capital rationing is the term applied when the restrictions on raising funds are due to causes external to the company. For example, potential providers of debt finance may refuse to provide further funding because they regard a company as too risky. This may be in terms of financial risk, for example, if the company's gearing is too high or its interest cover is too low, or in terms of business risk if they see the company's business prospects as poor or its operating cash flows as too variable. In practice, large established companies seeking long-term finance for capital investment are usually able to find it, but small and medium-sized enterprises will find raising such funds more difficult.	2
Soft capital rationing refers to restrictions on the availability of funds that arise within a company and are imposed by managers. There are several reasons why managers might restrict available funds for capital investment. Managers may prefer slower organic growth to a sudden increase in size arising from accepting several large investment projects. This reason might apply in a family-owned business that wishes to avoid hiring new managers. Managers may wish to avoid raising further equity finance if this will dilute the control of existing shareholders. Managers may wish to avoid issuing new debt if their expectations of future economic conditions are such as to suggest that an increased commitment to fixed interest payments would be unwise.	2
One of the main reasons suggested for soft capital rationing is that managers wish to create an internal market for investment funds. It is suggested that requiring investment projects to compete for funds means that weaker or marginal projects, with only a small chance of success, are avoided. This allows a company to focus on more robust investment projects where the chance of success is higher. This cause of soft capital rationing can be seen as a way of reducing the risk and uncertainty associated with investment projects, as it leads to accepting projects with greater margins of safety.	2
	7
(d)	
When undertaking the appraisal of an investment project, it is essential that only relevant cash flows are included in the analysis. If non-relevant cash flows are included, the result of the appraisal will be misleading and incorrect decisions will be made. A relevant cash flow is a differential (incremental) cash flow, one that changes as a direct result of an investment decision.	1
If current fixed production overheads are expected to increase, for example, the additional fixed production overheads are a relevant cost and should be included in the investment appraisal. Existing fixed production overheads should not be included.	1
A new cash flow arising as the result of an investment decision is a relevant cash flow. For example, the purchase of raw materials for a new production process and the net cash flows arising from the production process are both relevant cash flows.	1
The incremental tax effects arising from an investment decision are also relevant cash flows, providing that a company is in a tax-paying position. Direct labour costs, for example, are an allowable deduction in calculating taxable profits and so give rise to tax benefits: tax liabilities arising on incremental taxable profits are also a relevant cash flow.	1
One area where caution is required is interest payments on new debt used to finance an investment project. They are a differential cash flow and hence relevant, but the effect of the cost of the debt is incorporated into the discount rate used to determine the net present value. Interest payments should not therefore be included as a cash flow in an investment appraisal.	1
Market research undertaken to determine whether a new product will sell is often undertaken prior to the investment decision on whether to proceed with production of the new product. This is an example of a sunk cost. These are costs already incurred as a result of past decisions, and so are not relevant cash flows.	1
	Max 5
Total	**25**

Answer 3

	Marks
Performance measurement problems at IWL	
In a virtual organisation such as IWL, performance measurement can cause difficulties due to the fact that key players in the business processes and in the supply chain are not 'on site'. IWL has the problem of collecting and monitoring data about its employees working from home and the outsourcing partners.	2
At IWL, there is a reliance placed on information technology for handling these remote contacts. Collecting and monitoring performance should therefore be done automatically as far as possible. A large database would be required that can be automatically updated from the activities of the remote staff and suppliers. This will require the staff and supplier systems to be compatible.	2
The employees can be required to use software supplied by IWL and in fact, at IWL, they use the internet to log in remotely to IWL's common systems. Although this solution requires expenditure on hardware and software, it is within the control of IWL's management. Even with reviews of system logs to identify the hours that staff spend logged in to the systems, there are still the difficulty of measuring staff outputs in order to ensure their productivity. These outputs must be clearly defined by IWL's managers, otherwise there will be disputes between staff and management. One further outstanding issue is the need to ensure that such communication is over properly secured communication channels, especially if it contains customer or financial data.	2
The strategic partners, such as RLR, will have their own systems. A problem for IWL is that there is disagreement over the measurement of the key SLAs. In order to resolve such disputes, lengthy reconciliations between IWL's and RLR's systems will have to be undertaken, otherwise there are no grounds for enforcement of the SLAs and the SLAs represent IWL's key control over the relationship. The solution would be for the partners to agree a standard reporting format for all data that relates to the SLAs which would remove the need for such reconciliations.	2
Finally, there is the problem that IWL and the partner organisation may have differing objectives – the obvious conflict over price between supplier and customer being one. However, at IWL, this is being addressed by the use of detailed SLAs which both organisations can use to develop performance measures such as inventory levels and delivery times.	2
Performance management problems at IWL	
The performance management of employees is complicated due to the inability of management to 'look over their shoulder' since they are not present in the same building. However, employees will enjoy the advantages of home-working, such as lower commuting times, more contact with family and greater flexibility in working hours. The disadvantages are the difficulties in measuring outputs mentioned above and ensuring motivation and commitment. The motivation and commitment can be addressed through suitable reward schemes which would have to be tied to agreed outputs and targets for each employee. Work could be divided into projects where the outputs are more easily identified and bonuses can be paid related to these.	2
The performance management issues of handling the strategic partners include:	
– confidentiality where the partners will have access to commercially sensitive information about customers' locations and suppliers' names and lead times;	2
– reliability where the partner is supplying a business critical role (as for RLR with IWL) such that it would take considerable time to replace such a relationship and affect customer service while this happened;	2
– relationship management where the interface between the organisations can create wasteful activity if there is not an atmosphere of trust. At IWL, this is illustrated by the problem of reconciliation of performance data;	2
– profit-sharing where given the collaborative nature of the relationship and the difficulty of breaking it combine to imply that it will be in the interest of both parties to negotiate a contract that is motivating and profitable for both sides. For IWL, the business aim is to increase volume and this will require customer loyalty so the quality of service is important.	2
	Max 17
Total	**17**

Answer 4

Cost driver rate: **Marks**

Delivery	$\frac{\$220,000}{2,562} = \$85.87$ per delivery
Quality inspection	$\frac{\$200,000}{10,500} = \$19.05$ per inspection
Salesmen	$\frac{\$80,000}{230} = \$347.83$ per salesmen visit
After-sales service	$\frac{\$100,000}{350} = \$285.71$ per after sales visit

2

Analysing these costs:

Customer			X $	Y $	Z $	
Deliveries	2,500 @	85.87	214,675			
	50 @	85.87		4,294		
	12 @	85.87			1,030	**1**
Inspections	10,000 @	19.05	190,500			
	500 @	19.05		9,525		**0.5**
Salesmen visits	200 @	347.83	69,566			
	24 @	347.83		8,348		
	6 @	347.83			2,087	**1**
After sales visits	200 @	285.71	57,142			
	100 @	285.71		28,571		
	50 @	285.71			14,286	**1**
			531,883	50,738	17,403	

Final unit cost analysis:

	Production cost	Non-production cost	Total cost	Selling price	Profit (loss)	
	$	$	$	$	$	
Customer X	40.00	53.19	93.19	75.00	(18.19)	**1.5**
Customer Y	40.00	5.07	45.07	75.00	29.93	
Customer Z	40.00	1.74	41.74	75.00	33.26	

Thus, the Managing Director's misgivings were justified. The high cost of serving customer X effectively wipes out the profit being made on producing and selling the product and some consideration has to be given to the quality of service offered for the price charged. **1**

Total **8**

* * * END OF ANSWERS * * *

