
Answers

Section C

31 Melanie Co

(a) (i)	Year 0 \$	Year 1 \$	Year 2 \$	Year 3 \$
Lease				
Lease payment	(55,000)	(55,000)	(55,000)	
PV factor at 8%	1.000	0.926	0.857	
Present value	<u>(55,000)</u>	<u>(50,930)</u>	<u>(47,135)</u>	
Present value cost	<u>(153,065)</u>			
Borrow and buy				
Initial cost	(160,000)			
Residual value				40,000
Maintenance		(8,000)	(8,000)	(8,000)
Total	(160,000)	(8,000)	(8,000)	32,000
PV factor at 8%	1.000	0.926	0.857	0.794
Present value	<u>(160,000)</u>	<u>(7,408)</u>	<u>(6,856)</u>	<u>25,408</u>
Present value cost	<u>(148,856)</u>			

As borrow and buy offers the cheapest present value cost the machine should be financed by borrowing.

(ii) 3-year replacement cycle	Year 0 \$	Year 1 \$	Year 2 \$	Year 3 \$	Year 4 \$
Initial cost	(160,000)				
Residual value				40,000	
Maintenance		(8,000)	(8,000)	(8,000)	
Total	(160,000)	(8,000)	(8,000)	32,000	
PV factor at 10%	1.000	0.909	0.826	0.751	
Present value	<u>(160,000)</u>	<u>(7,272)</u>	<u>(6,608)</u>	<u>24,032</u>	
Present value cost	<u>(149,848)</u>				
EAC 3-year cycle = PV cost/Annuity factor 3 years at 10%					
EAC = $-\$149,848/2.487$ (60,253)					
4-year replacement cycle					
Initial cost	(160,000)				
Residual value					11,000
Maintenance		(12,000)	(12,000)	(12,000)	(12,000)
Total	(160,000)	(12,000)	(12,000)	(12,000)	(1,000)
PV factor at 10%	1.000	0.909	0.826	0.751	0.683
Present value	<u>(160,000)</u>	<u>(10,908)</u>	<u>(9,912)</u>	<u>(9,012)</u>	<u>(683)</u>
Present value cost	<u>(190,515)</u>				
EAC 4-year cycle = PV cost/Annuity factor 4 years at 10%					
EAC = $-\$190,515/3.170$ (60,099)					

Recommendation

The machine should be replaced every four years as the equivalent annual cost is lower.

- (b) In most simple accept or reject decisions, IRR and NPV will select the same project. However, NPV has certain advantages over IRR as an investment appraisal technique.

NPV and shareholder wealth

The NPV of a proposed project, if calculated at an appropriate cost of capital, is equal to the increase in shareholder wealth which the project offers. In this way NPV is directly linked to the assumed financial objective of the company, the maximisation of shareholder wealth. IRR calculates the rate of return on projects, and although this can show the attractiveness of the project to shareholders, it does not measure the absolute increase in wealth which the project offers.

Absolute measure

NPV looks at absolute increases in wealth and thus can be used to compare projects of different sizes. IRR looks at relative rates of return and in doing so ignores the relative size of the compared investment projects.

Non-conventional cash flows

In situations involving multiple reversals in project cash flows, it is possible that the IRR method may produce multiple IRRs (that is, there can be more than one interest rate which would produce an NPV of zero). If decision-makers are aware of the existence of multiple IRRs, it is still possible for them to make the correct decision using IRR, but if unaware they could make the wrong decision.

Mutually-exclusive projects

In situations of mutually-exclusive projects, it is possible that the IRR method will (incorrectly) rank projects in a different order to the NPV method. This is due to the inbuilt reinvestment assumption of the IRR method. The IRR method assumes that any net cash inflows generated during the life of the project will be reinvested at the project's IRR. NPV on the other hand assumes a reinvestment rate equal to the cost of capital. Generally NPV's assumed reinvestment rate is more realistic and hence it ranks projects correctly.

Changes in cost of capital

NPV can be used in situations where the cost of capital changes from year to year. Although IRR can be calculated in these circumstances, it can be difficult to make accept or reject decisions as it is difficult to know which cost of capital to compare it with.

Note: Only four reasons were required to be discussed.

32 Oscar Co

(a) Option 1

	\$	
Current trade receivables	5,370,000	
Revised trade receivables (28,000,000 x 30/365)	2,301,370	
Reduction in receivables	<u>3,068,630</u>	
	\$	\$
Reduction in financing cost = 3,068,630 x 0.07	214,804	
Reduction in admin costs	<u>30,000</u>	
Benefits		244,804
Factor's fee = 28,000,000 x 0.005		<u>(140,000)</u>
Net benefit		<u>104,804</u>

Option 2

	\$	\$
Reduction in financing cost = 3,068,630 x 0.07	214,804	
Reduction in admin costs	30,000	
Bad debts saved = 28,000,000 x 0.02	<u>560,000</u>	
Benefits		804,804
Increase in finance cost = 2,301,370 x 0.80 x 0.02	36,822	
Factor's fee = 28,000,000 x 0.015	<u>420,000</u>	
Costs		<u>(456,822)</u>
Net benefit		<u>347,982</u>

Both options are financially acceptable to Oscar Co, with Option 2 offering the greatest benefit and therefore it should be accepted.

(b) Oscar Co may benefit from the services offered by the factoring company for a number of different reasons, as follows:

Economies of specialisation

Factors specialise in trade receivables management and therefore can offer 'economies of specialisation'. They are experts at getting customers to pay promptly and may be able to achieve payment periods and bad debt levels which clients could not achieve themselves. The factor may be able to persuade the large multinational companies which Oscar Co supplies to pay on time.

Scale economies

In addition, because of the scale of their operations, factors are often able to do this more cheaply than clients such as Oscar Co could do on their own. Factor fees, even after allowing for the factor's profit margin, can be less than the clients' own receivables administration cost.

Free up management time

Factoring can free up management time and allow them to focus on more important tasks. This could be a major benefit for Oscar Co, where directors are currently spending a large amount of time attempting to persuade customers to pay on time.

Bad debts insurance

The insurance against bad debts shields clients from non-payment by customers; although this comes at a cost, it can be particularly attractive to small companies who may not be able to stand the financial shock of a large bad debt. This could well be the case for Oscar Co. As a small company which supplies much larger car manufacturing companies, it is particularly exposed to default by customers. On the other hand, it could be argued that large multinational companies are financially secure and default is unlikely, rendering bad debt insurance unnecessary.

Accelerate cash inflow

Factor finance can be useful to companies who have exhausted other sources of finance. This could be useful to Oscar Co if it cannot negotiate an increase in its overdraft limit.

Finance through growth

Although factor finance is generally more expensive than a bank overdraft, the funding level is linked to the company's volume of sales. This can help to finance expansion and protects the company against overtrading. In a rapid growth company such as Oscar Co, this could be a major advantage of factor finance.

- (c) A company's working capital investment is equal to the sum of its inventories and its accounts receivable, less its accounts payable.

The following factors will determine the level of a company's investment in working capital:

The nature of the industry and the length of the working capital cycle

Some businesses have long production processes which inevitably lead to long working capital cycles and large investments in working capital. Housebuilding, for example, requires the building company to acquire land, gain government permission to build, build houses and when complete, sell them to customers. This process can often take more than a year and require large investment in work-in-progress and therefore in working capital.

Other industries, such as supermarkets, buy goods on long credit terms, have rapid inventory turnover and sell to customers for cash. They often receive payment from customers before they need to pay suppliers and therefore have little (or negative) investment in working capital.

Working capital investment policy

Some companies take a conservative approach to working capital investment, offering long periods of credit to customers (to promote sales), carrying high levels of inventory (to protect against stock-outs), and paying suppliers promptly (to maintain good relationships). This approach offers many benefits, but it necessitates a large investment in working capital.

Others take a more aggressive approach offering minimal credit, carrying low levels of inventory and delaying payments to suppliers. This will result in a low level of working capital investment.

Efficiency of management and terms of trade

If management of the components of working capital is neglected, then investment in working capital can increase. For example, a failure to apply credit control procedures such as warning letters or stop lists can result in high levels of accounts receivable. Failure to control inventory by using the EOQ model, or JIT inventory management principles, can lead to high levels of inventory.

		<i>Marks</i>	<i>Marks</i>
Section C			
31	(a)		
	(i)		
	Lease timing	1	
	PV leasing	1	
	Maintenance cost	1	
	Purchase cost	0.5	
	Residual value	0.5	
	PV buy	1	
	Decision	<u>1</u>	
			6
	(ii)		
	3-year PV cost	1	
	3-year EAC	1	
	Maintenance 4-year	0.5	
	Residual value 4-year	0.5	
	4-year PV cost	1	
	4-year EAC	1	
	Decision	<u>1</u>	
			6
	(b)		
	1st reason	2	
	2nd reason	2	
	3rd reason	2	
	4th reason	<u>2</u>	
			<u>8</u>
			<u>20</u>
32	(a)		
	Revised trade receivables	1	
	Finance cost reduction	1	
	Admin savings	1	
	Factor fee Option 1	1	
	Bad debt saving	1	
	Finance cost increase	1	
	Factor fee Option 2	1	
	Comment	<u>1</u>	
			8
	(b)		
	Benefits	3	
	Oscar link	<u>3</u>	
			6
	(c)		
	First factor	2	
	Second factor	2	
	Third factor	<u>2</u>	
			<u>6</u>
			<u>20</u>



Financial Management

Examiner's commentary on September/December 2018 sample questions

This commentary has been written to accompany the published sample questions and answers and is written based on the observations of markers. The aim is to provide constructive guidance for future candidates and their tutors, giving insight into what the marking team is looking for, and flagging pitfalls encountered by candidates who sat these questions.

Question 31 – Melanie Co

Question 31 (a)(i)

This question asked candidates to evaluate whether the company should use leasing or borrowing as a source of finance.

There were some very good complete answers here.

The two marks available for the present value of the leasing option were often gained. Errors here mainly occurred where the lease rental payments were mistimed (treated as year-end cash flows and not, as the question stated, cash flows in advance), or where discounting the cash flows was not performed at all, thereby ignoring the fundamental principle of the time value of money.

In terms of the borrowing option, a fundamental error kept reoccurring which displayed a lack of understanding of the very nature of discounted cash flow. This error, seen far too often, was the inclusion of interest payments within the computation of net cash flow. The cost of capital which should be used to discount the net cash flows in this case is the cost of the debt finance being used (taxation being ignored in this question), and hence the inclusion of interest payments in the cash flow schedule means that such interest payments are effectively being double counted.

Some errors were also seen in the timing of the relevant cash flows, namely the purchase cost, the maintenance costs and the residual value. Some candidates also erroneously decided to use the 10% discount rate, which was not presented until it became relevant in part (a)(ii).

Lastly, the requirement asked candidates to evaluate the source of finance to be used, hence it is expected that a recommendation would be made based upon the figures calculated. Failure to do this meant that a relatively straightforward mark was not gained.

Question 31 (a)(ii)

The requirement here was to calculate the equivalent annual cost (EAC) of operating both a three-year and a four-year replacement cycle, and to make a recommendation.

There were many fully correct answers here.

Where candidates had made the error noted above in part (a)(i), namely including interest payments in their cash flow schedules, it was usually repeated in these computations. The other common error here was a failure to know how to arrive at an EAC, with the division of NPV simply by the number of years being an often seen mistake, as well as a simple comparison of NPVs computed in order to make a judgement. Some responses lacked an appreciation of the role of annuity factors.

Some other mistakes made included a failure to use the different maintenance costs and residual value in the four-year option, as well as unnecessary computation of the EAC of the leasing option (sic) or the EACs of other replacement cycles.

As has been discussed in respect of other requirements, a mark could have been scored by making the required recommendation. This was disappointingly missed by some candidates.

Question 31 (b)

Here candidates were asked to critically discuss four reasons why net present value (NPV) is regarded as superior to internal rate of return (IRR) as an investment appraisal technique.

Eight marks were available, with two marks being available for each of the four reasons. The grid available to candidates in the CBE environment is useful in helping to organise candidates' answers, although some responses were too brief and some offered fewer than the four reasons required by the question.

Whilst some of the reasons outlined in the suggested solution were seen quite often in candidates' answers, weaker responses simply described what NPV and IRR are and how their respective calculations are performed. Furthermore, many answers gained very few marks because they did not adopt a comparative approach to addressing the requirement, for example, by making a statement about NPV without referring to IRR and so not discussing the superiority of NPV over IRR.

Other errors seen included:

- Stating that IRR is inferior to NPV because IRR ignores the time value of money;
- Arguing that IRR is inferior to NPV because different choices for discount rates give different values of IRR. However, manual calculation of IRR is a first approximation for the actual value of IRR, which can be found quickly using a spreadsheet function, as indeed can NPV;

- Making very general and brief points such as quick, easy, simple to understand;
- Suggesting that one technique or the other is more easily understood by managers, without any justification.

Question 32 – Oscar Co

Question 32 (a)

This question required candidates to calculate the costs and benefits of two options offered to Oscar Co by a factoring company and to comment on the findings.

The net benefit of Option 1 was often precisely calculated, with many candidates arriving at \$104,804.

There were fewer totally correct answers in the computation of the net benefit of option 2. The most frequently occurring error here was a failure to recognise that the factor's advance would bring about an increase in the cost of the financing of the revised trade receivables. In other words, 80% of the trade receivables would be financed at 9%, rather than at 7%.

Other errors included:

- Using trade receivables as the basis for calculating factor fees or even, via trade receivables days of 30, credit sales revenue;
- Putting bad debt savings in both options;
- Basing bad debt savings on trade receivables and not credit sales revenue;
- Failing to calculate the effect on financing costs of the respective options;
- Basing the increased financial cost in option 2 on current trade receivables, or on current credit sales revenue.
- Confusing the nature of items, such as mixing capital and revenue items, so, for example, the value of the factor's advance is incorrectly included as a cost, rather than the impact of its financing cost.

Candidates sitting this examination in the future should be aware that having the use of spreadsheet functionality does not abdicate responsibility for showing the build up of how a figure has been arrived at. A supporting working can be shown inside a single cell. Hence the increase in finance cost referred to above could be built up in the following way:

$$28,000,000 * 30/365 * 0.80 * 0.02 = \$36,822.$$

Some candidates did not make a comment on their findings, which should simply be about which option to choose and why, thereby failing to gain a relatively straightforward mark.

Question 32 (b)

Here candidates were required to discuss the reasons why Oscar Co may benefit from the services offered by the factoring company. There are two important points about the stated requirement which are worth emphasising here. Firstly, the requirement is clear in asking for reasons other than costs and benefits already calculated. Secondly, the requirement asks for reasons why Oscar Co may benefit from the factoring company.

Whilst there were good responses here that discussed valid reasons, such as those outlined in the suggested solution, and were able to relate these reasons to the circumstances outlined in the case scenario, there were a disappointing number of responses which were too brief for the marks available. In a requirement asking for a discussion and attracting six marks, it is insufficient to offer short phrases or bullet points lacking in detail.

As already noted, the requirement was for discussion of reasons other than costs or benefits already calculated. Sadly, many answers discussed these already-calculated costs and benefits, such as the reduction in administrative costs or the bad debt savings.

Furthermore, some answers simply made no link to Oscar Co, even though this was a question requirement. Candidates sitting in the future are encouraged to read the requirement carefully and, where asked for, relate their answers to the company in question. This should be done in a meaningful way by, for example, discussing the factor's expertise and contrasting this with the lack of business administration skills of the four founders of the company. Simply mentioning Oscar Co several times in a response, but not actually discussing the company's characteristics and circumstances, does not qualify as linking reasons to the company.

Question 32 (c)

This question required candidates to discuss three factors which determine the level of a company's investment in working capital.

Firstly, a discussion is asked for. If six marks are offered for discussing three factors, then assuming that two marks are offered for each factor is reasonable. The grid now seen in Computer Based Examinations should prove useful in organising candidates' answers. That said, it is worth reiterating, a 'bullet point' or short phrase is rarely, if ever, going to be sufficient to attract the two marks available for each factor.

It is worth commenting that answers to this question were disappointing. Many answers did not appear to understand the question requirement, even though this was taken directly from the Financial Management syllabus.

Common errors in candidates' responses included:

- Discussing (or simply listing) elements of working capital, without relating answers to the question requirement;
- Discussing working capital financing policy, when the requirement said working capital investment policy;
- Interpreting 'factors determining the level of working capital investment' as 'accounting ratios', such as current ratio or quick ratio;
- Stating a factor, but then with no accompanying discussion e.g. the 'nature of the industry', but without explaining why the industry affected working capital or giving examples.

As sometimes happens, candidates offered responses based upon what they would have liked to have been asked about working capital management, rather than to the actual question asked in the examination. For example, some candidates' entire answers to this part (c) were wholly about 'liquidity versus profitability' or about permanent and fluctuating assets, and conservative, aggressive and moderate policies.