IB Business Management: Finance Practice Worksheet #2 MARKSCHEME

1. (i) BEP for *Stay in Touch*:

= 333 333.3 units

For a clear use of the formula and a correct answer.

[2 marks]

For a correct use of the formula and incorrect answer.
For a correct answer without working.

[1 mark]

(ii) FC + target rate of profit = $ 5 000 000 + $15 000 000 = 1 333 333.33
    contribution $ 25 − $10

For a correct answer.

[2 marks]

For an incorrect answer, but with evidence of an appropriate method of calculation.

[1 marks]

2. (a) Calculations:

Stay in Touch:
If contracting out, it will lose the current contribution of
$25 – $10 = $15 contribution per unit × 1 000 000 units = $15 000 000 total contribution

Contribution after contracting out:
$25 – $13 = $12 per unit × 1 000 000 units = $12 000 000

A loss of: $3 000 000 contribution
But a saving of: $5 000 000 on overheads. Therefore, a net gain of $2 000 000

Arguments in favour of contracting out:
- looking at contribution and profit *Stay in Touch* will be financially better off
- given the very competitive market, both nationally and internationally, cutting production costs and concentrating on marketing can enable the company to become more focused and competitive
- given the short life cycle of such products and the nature of the industry, *Stay in Touch* needs to continuously innovate to remain competitive. Concentrating on R&D can enable the company to do so
- Speedy will be able to double the production capacity of Stay in Touch
- *any other relevant argument.*

Arguments against contracting out:
- closing down the production floor may result in redundancy costs and have a poor motivation effect on the remaining members of staff.
- Stay in Touch will rely on a manufacturing company that is already dealing with other companies worldwide. Speedy's inability to meet orders, production faults etc. can erode Stay in Touch's brand image.

- Speedy might increase the price in the future. The current calculation of a $2 million gain might not be relevant.
- once a production facility is closed, it might be very difficult to reopen again
- *any other relevant argument.*

For clear and correct calculations of the option and a logical analysis that incorporates financial and non-financial issues. Analysis is related to information in the case study, as well as to some general points. Evaluation is provided and well substantiated, and for
[8 marks] a judgment is given.

For clear and substantially correct calculations of the option and a logical analysis that incorporates some financial and non-financial issues. Evaluation is provided, but may not be well substantiated.

[5 to 6 marks]

For some calculations relating to the option and somewhat more limited analysis, that incorporates financial and/or non-financial issues, possibly in an unbalanced manner. Candidates do not fully relate the information to the case study. Evaluation may not be provided.

[3 to 4 marks]

For a limited and generalized response.

[1 to 2 marks]

(b) Calculations: Speedy profit before acceptance of order from *Stay in Touch*.
Contribution = $20 – $12 = $8 per unit

Bep : $\frac{\$60\ 000\ 000}{\$8}$ = 7 500 000 units

Profit = 2 500 000 units × $8 = $20 000 000 (margin of safety × contribution per unit)

Accepting extra order will not result in an increase in fixed costs. Speedy will get $1 million in extra contribution = extra profit.

$13 – $12 = $1 extra contribution
$1% 100 000 units = $1 000 000 extra profit

Arguments in favour of accepting the order:
- financially Speedy will be better off given its spare capacity. Accepting extra orders will result in a higher level of profit
- the order that *Stay in Touch* is likely to place, especially initially, is only a small proportion of Speedy's total output. Speedy is, therefore, unlikely to develop a dependency on *Stay in Touch*

Arguments against accepting the order:
- the special cheaper price offered to *Stay in Touch* is likely to upset more significant and larger clients. Speedy might be put under pressure to reduce prices or lose some contracts
- the level of the extra profit might not be significant for Speedy, especially if the cost of setting up the agreement is likely to be high
- Speedy should ensure that a better offer is not available somewhere else.

It appears that the significance of the arguments in favour outweigh the arguments against. However, there is no one prescribed answer.

For clear and correct calculations of the option and a logical analysis, which incorporates financial and non-financial issues. Analysis is related to information in the case study as well as to some general points. Evaluation is provided and is well substantiated, and for *[8 marks]* a judgment is given.

[7 to 8 marks]

For clear and substantially correct calculations relating to the option and a logical analysis that incorporates some financial and non-financial issues. Evaluation is provided but may be rather limited.

[5 to 6 marks]

For some calculations relating to the option and somewhat more limited analysis that incorporates financial and/or non-financial issues, possibly in an unbalanced manner.

Evaluation may not be provided.

[3 to 4 marks]

For a limited and generalized response.

[1 to 2 marks]

3. (i)

Football club A
−30 + −2 + 76 + 96 = 140 (after 4 years)
200 −140 = 60

 × 12 = 4.8 months (146 days)
Payback period = 4 years 4.8 months (accept 5 months)

Football club B
15 +18 + 21 = 54
70 − 54 = 16

 × 12 = 8 months (243 days)
Payback period = 3 years 8 months.

The calculations are accurate and there is clear, full working.

[3 marks]

There is one error, but full working is shown.

[2 marks]

The answers are accurate but the working is missing or unclear, or the answer is inaccurate, but there is some understanding of method.

[1 mark]

(ii) **Football club A**

ARR =

$290m – $200m = $90m

 = $18m per annum

 × 100 = 9% on investment

Football club B

ARR = $108m – $70m = $38m

 = $7.6m per annum

 × 100 = 10.86% on investment

The calculations are accurate and there is clear, full working.

[3 marks]

There are up to two errors, but full working is shown.

[2 marks]

The answers are accurate, but the working is missing or unclear, or the answer is inaccurate, but there is some understanding of method.

[1 mark]

Answer summary:

Figures in millions of $	Football club A	Football club B
Year 1	–30	15
Year 2	–2	18
Year 3	76	21
Year 4	96	24
Year 5	150	30
Total return	290	108
Cost of takeover in Year 0	–200	–70
Net return	90	38
payback	–200 –30 –2 +76 +96 = –60 60/150 × 12 = 4 years 4.8 months (146 days)	–70 +15 +18 +21 = –16 16/24 × 12 = 3 years 8 months (243 days)
ARR	90/5 = $18 m 18/200 × 100 = 9%	38/5 = $7.6 m 7.6/70 × 100 = 10.86%

(iii) **Football Club A**

–30 ×	.9434	=	–28.3
–2 ×	.89	=	–1.78
76 ×	.8396	=	63.81
96 ×	.7921	=	76.04
<u>150 ×</u>	.7473	=	<u>112.1</u>
290			<u>221.87 less investment of $200m = $21.87m NPV</u>

Football Club B

15 ×	.9434	=	14.15
18 ×	.89	=	16.02
21 ×	.8396	=	17.63
24 ×	.7921	=	19.01
<u>30 ×</u>	.7473	=	<u>22.42</u>
108		=	<u>89.23 less investment of $70m $19.23m NPV</u>

The calculations are accurate and there is clear, full working.

[4 marks]

There are up to two errors, but full or partial working is shown.

[2 to 3 marks]

The answers are accurate, but the working is missing or unclear, or the answer is inaccurate, but there is some understanding of method.

[1 mark]

4. The financial issues are not clear-cut. The investment in Club A provides the highest Net Present Value, but the investment in Club B provides the quickest payback and the highest ARR.

Lev Yashin wishes to select the lowest risk investment, which is the one that usually paybacks more quickly, which is the investment in Club B. However, the payback periods are relatively close so it would be worth examining the other two measures. Club B's returns are consistently more in the early years. Its ARR is higher and at 10.86% appears good, although it would need to be compared to other potential market investments. Its initial investment at $70m is also considerably lower than the $200m required to acquire Club A. In the early years, the investment in Club A will lose money. As risks increase over time, it may not be wise to risk such an investment.

Alexi is more willing to take a risk. Club A offers by far the largest future returns, although its net present value is not substantially greater than the investment in Club B.

There are other issues, which may persuade the pair to invest in either or neither of the investments. It is clear that football is not predictable and that the financial estimates for net returns are based on performance. Even the top clubs can have lean spells, which may reduce their attractiveness to investors. Many clubs make losses. Club A already has substantial debt, but the interest of future sponsors would have to be evaluated.

Club B's ground offers the opportunity for other commercial ventures and these would also have to be evaluated on financial grounds. This may be the difference between the two investments, as the two partners appear to be interested in a commercial return rather than the acquisition of a football club. However, if either partner has a genuine interest in the game then the opportunities for publicity, power and personal satisfaction may be offered by the bigger club, Club A.

There is no right answer to the decision, but it is clear that further information may be required and the objectives of such an acquisition made clear. Ultimately, the risks may be too high to suggest that an investment is wise.

N.B. *Comments based on candidate's own figures should be rewarded. Do not double penalize.*

The advice on investments is supported by both numerate and qualitative judgments, using the evidence presented in the question. The closeness of the investment appraisal results is recognized as well as the high levels of risk involved in both investments. The need for further research may be stated.

[7 to 8 marks]

The advice on investments is supported by some evidence. The discussion may lack some balance and depth, particularly at the lower end of the band.

[3 to 6 marks]

The answer is limited and generalized, and does not use the range of information available.

[1 to 2 marks]

8. (i) Present output data

	Wholeheart wheat flakes	Max-Mart wheat flakes
Weekly production	60 000 units	60 000 units
Unit price received	$1.30	$1.10
Variable cost per unit	$0.40	$0.40
Contribution per unit	$0.90	$0.70
Product contribution		
60 000 × $0.90	**$54 000** 60 000 × $0.70	**$42 000**
Total contribution =	$54 000 + $42 000 =	$96 000
Less Fixed costs		$56 000
Total weekly profit		$40 000

The calculation of total profit is accurate and working is shown in detail.

[3 marks]

The calculation of total profit is accurate, but full working is not shown or there are up to two errors in calculation.

[2 marks]

The method is appropriate, but no working is shown at all, or there are up to three errors in calculation.

[1 mark]

(ii) *Max-Mart* wheat flakes

Weekly production	150 000 units
Unit price received	$1.10
Variable cost per unit	$0.40
Contribution per unit	$0.70
Total contribution	
150 000 × $0.70	$105 000
Less Fixed costs	$56 000
Total weekly profit	$49 000

Therefore the change in profit = **$9 000**

Award *[1 mark]* if the calculation is correct.

N.B. the change **not** the new weekly profit must be shown.

(iii) Present level of profit = $40 000
An increase of 30% = $40 000% 130% = $52 000

The proposed offer does not meet the target. What price will meet the target?

Profit	=	Total Revenue – Total Costs (Fixed costs + Variable costs)
$52 000	=	150 000 X – [$56 000 + (150 000 × $0.40)]
$52 000	=	150 000 X – [$56 000 + $60 000]
150 000 X	=	$52 000 + $56 000 + $60 000
150 000 X	=	$168 000
X	=	$168 000 = $1.12 per box
		150 000

The calculation of price is accurate and working is shown in detail.

[3 marks]

The calculation of price is accurate, but full working is not shown or there is one error in calculation.

[2 marks]

The calculation of price is accurate, but no working is shown at all, or there are two errors in calculation.

N.B. Do not double penalize if the profit calculated in part (i) is used as the basis of a 30%

increase, provided this calculation is carried out accurately.

[1 mark]

9.

	$ 000		
Fixed assets			
Land and buildings	420		
Machinery	360		
Fixture and fittings	53		
	___		
Total fixed assets			833
Current assets			
Stock	12		
Debtors	38		
Cash at bank	22		
	___		
		72	
l*ess* current liabilities			
Creditors		68	
Working capital			4
			___
Net assets			837
Financed by:			
Share capital		600	
Reserves		237	
			___
			837

Layout, presentation and calculations are appropriate and correct, though there may be one error for *[5 marks]*.

[5 to 6 marks]

Some errors in calculation. Layout and presentation could be improved.

[3 to 4 marks]

A limited attempt at a balance sheet.

[1 to 2 marks]

10.   (a)   (i)   *N.B.*
Calculations should be shown for each month.

FIFO

Date	Purchases			Issues/Sales			Balance		
	Quantity Price Value			Quantity Price Value			Quantity Price Value		
	$	$		$	$		$	$	
Opening stock (January)							12 @ 156		1872
January	140 @ 165	23100		12 @ 156	1872				
				74 @ 165	12210		66 @ 165		10890
February	60 @ 162	9720		66 @ 165	10890				
				27 @ 162	4374		33 @ 162		5346
March	160 @ 170	27200		33 @ 162	5346				
				77 @ 170	13090		83 @ 170		14110
April	60 @ 168	10080		83 @ 170	14110				
				25 @ 168	4200		35 @ 168		5880
May	150 @ 173	25950		35 @ 168	5880				
				90 @ 173	15570		60 @ 173		10380
June	100 @ 170	17000		60 @ 173	10380				
				86 @ 170	14620		14 @ 170		**2380**

LIFO

Date	Purchases			Issues/Sales			Balance		
	Quantity Price Value			Quantity Price Value			Quantity Price Value		
	$	$		$	$		$	$	
Opening stock (January)							12 @ 156		1872
January	140 @ 165	23100		86 @ 165	14190		12 @ 156		1872
							54 @ 165		8910
February	60 @ 162	9720		60 @ 162	9720		12 @ 156		1872
				33 @ 165	5445		21 @ 165		3465
March	160 @ 170	27200		110 @ 170	18700		12 @ 156		1872
							21 @ 165		3465
							50 @ 170		8500
April	60 @ 168	10080		60 @ 168	10080		12 @ 156		1872
				48 @ 170	8160		21 @ 165		3465
							2 @ 170		340
May	150 @ 173	25950		125 @ 173	21625		12 @ 156		1872
							21 @ 165		3465
							2 @ 170		340
							25 @ 173		4325
June	100 @ 170	17000		100 @ 170	17000				
				25 @ 173	4325				
				2 @ 170	340				
				19 @ 165	3135		12 @ 156		1872
							2 @ 165		330
									2202

The layout and working is clear and the calculations are essentially accurate.

[7 to 8 marks]

The calculations contain minor errors. At the top end the layout and workings are clear.

[3 to 6 marks]

There are many inaccuracies and the layout and working are poor. For *[1 mark]* there must be some understanding shown.

[1 to 2 marks]

(b)

		FIFO	**LIFO**
Sales:	668 units @ $220	146960	146960
Opening stock:	12 @ 156	1872	1872
Purchases		<u>113050</u>	<u>113050</u>
		114922	114922
Less closing stock		<u>2380</u>	<u>2202</u>
Cost of goods sold		112542	112720
Gross profit		**34418**	**34240**

The layout and working is clear and the calculations are accurate.

[3 marks]

There is a maximum of one error. There is logic in the layout.

[2 marks]

There are several errors, but the answer contains some accuracy and logic.

 [1 mark]

N.B. *Do not double penalize candidates bringing through incorrect figures from part (a).*