

Section A**Question 1****Suggested Solution:**

(a)	<u>Molding</u>	<u>Assembly</u>	<u>Finishing</u>	<u>Service A</u>	<u>Service B</u>
	\$'000	\$'000	\$'000	\$'000	\$'000
Overheads	1,430	870	833	200	179
Reapportionment of service costs:					
- from service A	42	84	63	(210)	21
- from service B	<u>40</u>	<u>110</u>	<u>40</u>	<u>10</u>	<u>(200)</u>
	<u>1,512</u>	<u>1,064</u>	<u>936</u>	<u>0</u>	<u>0</u>

Workings:

Let x be the total overhead costs of service centre A to be apportioned

Let y be the total overhead costs of service centre B to be apportioned

$$x = 200,000 + 0.05y \text{ --- (1)}$$

$$y = 179,000 + 0.1x \text{ --- (2)}$$

Substitute (1) into (2),

$$y = 179,000 + 0.1(200,000 + 0.05y)$$

$$y = 179,000 + 20,000 + 0.005y$$

$$0.995y = 199,000$$

$$y = 200,000 \text{ --- (3)}$$

Substitute (3) into (1),

$$x = 200,000 + 0.05(200,000)$$

$$x = 210,000$$

(5 marks)

(b)

Budgeted absorption rate – Molding

$$= \frac{\$1,512,000}{560,000 \text{ MH (W1)}}$$

$$= \underline{\underline{\$2.7 / \text{MH}}}$$

Budgeted absorption rate – Assembly

$$= \frac{\$1,064,000}{280,000 \text{ DLH (W2)}}$$

$$= \underline{\underline{\$3.8 / \text{DLH}}}$$

Budgeted absorption rate – Finishing

$$= \frac{\$936,000}{520,000 \text{ DLH (W3)}}$$

$$= \underline{\underline{\$1.8 / \text{DLH}}}$$

Workings:

(1)

$$\begin{aligned} \text{Total machine hours - Molding} &= 120,000 \text{ units} \times 3 \text{ MH} + 40,000 \text{ units} \times 5 \text{ MH} \\ &= 560,000 \text{ MH} \end{aligned}$$

(2)

$$\begin{aligned} \text{Total direct labour hours - Assembly} &= 120,000 \text{ units} \times 2 \text{ DLH} + 40,000 \text{ units} \times 1 \text{ DLH} \\ &= 280,000 \text{ DLH} \end{aligned}$$

(3)

$$\begin{aligned} \text{Total direct labour hours - Finishing} &= 120,000 \text{ units} \times 3.5 \text{ DLH} + 40,000 \text{ units} \times 2.5 \text{ DLH} \\ &= 520,000 \text{ DLH} \end{aligned}$$

(c)

**Statement showing the full unit cost and the annual budgeted profit and loss
for the year ended 2009**

	<u>Model A123</u>	<u>Model Z890</u>
Direct costs	\$	\$
- direct materials	27.00	26.00
- direct labour cost	[(2 + 2 + 3.5) DLH x \$4.5] 33.75	[(3 + 1 + 2.5) DLH x \$9] 58.50
Overhead costs		
- Molding dept.	(3 MH x \$2.7) 8.10	(5 MH x \$2.7) 13.50
- Assembly dept.	(2 DLH x \$3.8) 7.60	(1 DLH x \$3.8) 3.80
- Finishing dept.	(3.5 DLH x \$1.8) <u>6.30</u>	(2.5 DLH x \$1.8) <u>4.50</u>
Unit cost	<u>82.75</u>	<u>106.30</u>

	<u>Model A123</u>	<u>Model Z890</u>
Unit selling price	80.00	115.00
Unit profit / (loss)	(2.75)	8.70
No. of units sold	120,000 units	40,000 units
Total profit / (loss)	<u>(330,000)</u>	<u>348,000</u>

(7 marks)

Part B

(a)

Process account					
	Units	\$		Units	\$
Opening WIP b/d	29,500	978,397	Normal loss	4,950	#113,850
Inputs:	123,750		Finished goods (W1)	111,100	4,592,697
Materials costs		3,336,597	Abnormal loss (W2)	1,200	44,568
Conversion		1,950,281	Closing WIP c/d (W3)	36,000	1,514,160
	153,250	6,265,275		153,250	6,265,275

4,950 units (damaged items) x \$23 = \$113,850

(10 marks)

(b)

Income Statement for the month of February 2009

	\$
Sales (110,000 units x \$60)	6,600,000
Cost of sales (W4)	4,544,627
Gross profit	2,055,373
Less: Abnormal loss (W5)	16,968
Profit	2,038,405

(5 marks)

Workings:

<u>Production data</u>	<u>Number of units</u>
Opening WIP	29,500
Add: Inputs	123,750
	153,250
Less: Normal loss (4% x 123,750)	(4,950)
Expected output	148,300

<u>Production data</u>	<u>Number of units</u>
Finished goods	111,100
Add: Closing WIP	36,000
	<u>147,100</u>
Add: Abnormal loss (Bal. fig.)	1,200
Expected output	<u>148,300</u>

Goods finished in February:	<u>Number of units</u>
- Started in January	29,500
- Started and finished in February	81,600 (b.f.)
	<u>111,100</u>

	<u>Period</u> <u>cost</u> \$		<u>Opening</u> <u>WIP</u> Units	<u>Abnormal</u> <u>loss</u> Units	<u>Completed</u> <u>units</u> Units	<u>Closing</u> <u>WIP</u> Units	<u>Total</u> <u>EU</u> Units	<u>Cost</u> <u>per</u> <u>unit</u> \$
Materials	3,243,240 *		-	1,200	81,600	36,000	118,800	27.3
Conversion	1,929,788 **		2,950	720	81,600	32,400	117,670	16.4
	<u>5,173,028</u>		(29,500x10%)	(1,200x60%)		(36,000x90%)		<u>43.7</u>

* $\$3,336,597 - \$113,850 \times 82\% = \$3,243,240$

** $\$1,950,281 - \$113,850 \times 18\% = \$1,929,788$

(1) Value of finished goods:

	\$
Opening WIP (\$678,245 + \$300,152)	978,397
Cost to complete (2,950 units x \$16.4)	48,380
	<u>1,026,777</u>
Started and completed (81,600 units x \$43.7)	3,565,920
	<u>4,592,697</u>

(2) Value of abnormal loss:

	\$
Materials (1,200 units x \$27.3)	32,760
Conversion (720 units x \$16.4)	11,808
	<u>44,568</u>

(3) Value of Closing WIP:

	\$
Materials (36,000 units x \$27.3)	982,800
Conversion (32,400 units x \$16.4)	531,360
	<u>1,514,160</u>

(4) Cost of sales:

	\$
Opening WIP (\$678,245 + \$300,152)	978,397
Cost to complete (2,950 units x \$16.4)	48,380
	<u>1,026,777</u>
Started and completed [(110,000 – 29,500) units x \$43.7]	3,517,850
	<u>4,544,627</u>

(5) Abnormal loss charged to income statement:

	\$
Total value of abnormal loss	44,568
Less: Scrap value (1,200 units x \$23)	(27,600)
	<u>16,968</u>

(Total 30 marks)

Question 2**Suggested solution:**

(a) A standard cost sheet

	\$	\$	
Direct materials:			
Plastic material	18 x 2.2	39.60	
Freight charges & handling charges	0.4 +0.1	0.50	
Purchase discount	39.6x 5%	<u>(1.98)</u>	
		38.12	
Direct Labour	(2+0.4+0.2) x \$46	119.60	
Production overheads (\$31,500/ 3,500)		<u>9.0</u>	
Standard cost per unit		166.72	
(Rounded to two decimal places)			

(b)

In the standard cost system, all direct materials and direct labour costs are considered carefully to establish the Practical Standards (Currently attainable standards) of products in order to motivate the workers to achieve a higher performance level. By using variance analysis, different causes of variances can be investigated to enhance operational control. (2 marks)

(c)

--Sales price variance= Actual sales at actual prices-Actual sales at standard price

--(3100 x \$190) – (3100 x \$204#) = \$43,400 (A)

\$166.72 x 122.5% = \$204.232 ~ \$204

--Sales volume variance=(Actual sales- Budgeted sales)x Budgeted Margin

--(3,100-3,500) x (204-166.72)= \$14,912 (A)

Total Sales Variances = \$43,400 (A) + \$14,912 (A) = \$58,312 (A)

--Direct materials price variance=(Standard Price x Actual Qty)-Actual Costs

--(38.12/2.2 x 7,500) – 127,500 = \$2,454.55 (F)

--Direct materials usage variance= (Standard Qty- Actual Qty) x Standard Price

--(2.2 x 3,500 –7,500) x 38.12/2.2= \$3,465.45 (F)

Total Direct Materials Cost Variances= \$5,920 (F)

--Direct Labour rate variance=(Standard Rate x Actual Hours) – Actual Costs

--[46 x (383,250/50)] –383,250 = \$30,660 (A)

--Direct Labour usage variance=(Standard Hr-Actual Hr) x Standard Rate

--[2.6x3,500- (383,250/50)] x 46 = \$66,010(F)

Total Labour Cost Variances= \$35,350(F)

(9 marks)

(d)

Tenful Ltd

Manufacturing, trading, and profit and loss account for the week one to week five	\$	\$
Total materials costs(\$38.12 x 3,500)		133,420
Total Labour costs(\$119.6 x 3,500)		<u>418,600</u>
Prime costs		552,020
Production overheads(\$9 x 3,500)		<u>31,500</u>
Cost of goods completed(\$166.72x 3,500)		583,520

	\$	\$
Sales (3,100 units at \$190 each)		589,000
Standard cost of production(\$166.72 x 3,500)	583,520	
Less: Closing stock(\$166.72x 400)	<u>66,688</u>	
Cost of goods sold at standard costs	516,832	
Variance adjustments:		
Materials price variance	(2,455)	
Materials usage variance	(3,465)	
Labour rate variance	30,660	
Labour usage variance	(66,010)	
Production overheads	(2,100)	
Subcontracting expenses	7,250	
Stock Value written off to net realizable value [400x (166.72-145)]	<u>8,688</u>	
Actual cost of goods sold		<u>489,400</u>
Gross profit		<u>99,600</u>
Fixed costs		
Administrative overheads		<u>101,800</u>
Net Profits		<u>(2,200)</u>

(8 marks)

(e)

No, under absorption costing system, the profit will be higher than marginal costing method only if there is an increase in stock level, which will absorb a portion of fixed production overheads and will be carried forward to next period for selling purpose.

However, if there are no changes in the stock level during the period, both marginal and absorption costing methods will give the same profits.

(3 marks)

(f)

<u>Activity Level</u>	9,000 units
	\$
Depreciation -equipment	80,000
Power (W1)	4,700
Rent & rates	3,000
Wages (W2)	13,500
Repairing cost (W3)	280
Supervision	<u>20,000</u>
	<u>121,480</u>

(5 marks)

Working 1:

$$\begin{aligned} \text{Power cost variable portion} &= \frac{\$(5,300-5,000)}{(11,000-10,000)} \\ &= \$0.3/\text{unit} \end{aligned}$$

$$\text{The fixed cost portion} = \$5,000 - (10,000 \times 0.3) = \$2,000$$

$$\text{Variable portion at 9,000 units} = \$0.3 \times 9,000 = \$2,700$$

$$\text{Total power cost at 9,000 units} = \$2,700 + \$2,000 = \underline{\underline{\$4,700}}$$

Working 2:

$$\text{Variable wages per unit} = \frac{\$(15,000-10,500)}{(10,000-7,000)} = \$1.5$$

$$\text{Total wages cost} = 9,000 \times \$1.5 = \underline{\underline{\$13,500}}$$

Working 3:

$$\begin{aligned} \text{Repairing cost variable portion} &= \frac{\$(320-240)}{(11,000-7,000)} \\ &= \$0.02/\text{unit} \end{aligned}$$

$$\text{The fixed cost portion} = \$320 - (11,000 \times 0.02) = \$100$$

$$\text{Variable portion at 9,000 units} = \$0.02 \times 9,000 = \$180$$

$$\text{Total repairing cost at 9,000 units} = \$100 + \$180 = \$280$$

(Total : 30 marks)

Section B**Question 3****Suggested Solution**

- (i) The depreciation expenses should be charged at \$ 40,000 [$\$200,000 \times (1/5)$] and deducted from the revenue. Furthermore, depreciation expenses is a non-cash item, it represents an allocation of cost on fixed asset over its useful life to match against the related revenue generated in each year according to Matching Concept.

Based on Accrual basis, expenditures should be written off as expenses when they are incurred, not when they are paid. Therefore, the instalment paid at \$51,000 should not be treated as depreciation expenses.

\$1,000 [$(\$51,000 \times 4 - \$200,000) / 4$] should be charged as interest expense.

The net book value of \$160,000 ($\$200,000 - \$40,000$) should be written down to the recoverable amount of \$100,000. in accordance with Prudence . Impairment loss of \$60,000 ($\$160,000 - \$100,000$) should be reported in the profit and loss account in 2008.

Sub Total: 6

- (ii) The amount of stock loss should be reported at cost of \$96,000 ($\$120,000 / 125\%$) instead of \$120,000 at selling price.

The closing stock should be increased by \$24,000 ($\$120,000 - \$96,000$)

Since \$96,000 is large compared with the level of profits, Materiality concept with disclosure note requires that it should be separately disclosed as stock loss in the current profit and loss account in order to show the true and fair view.

Sub Total: 4

- (iii) Since the financial controller believe that the new accounting system will bring benefits to Mr. Chung's business for the future accounting period (increase the efficiency of business would lead to cost reduction) and it is practical to be used in coming accounting years,

Mr. Chung can recognize it as development cost (deferred expenditure / intangible assets).

The amount of deferred asset (intangible assets) should be reliable measured as \$260,000 which is already paid and spent.

The whole amount should be allocated to several accounting periods according to the pattern of benefits arisen from the use the system under the Matching Concept.

Regarding the training cost provided to staff, it should be written off as operating expenses .

Sub Total: 5

(b)

Gross profit reported	\$620,500
(ii) Correcting the closing stock (\$120,000 - \$96,000)	24,000
(ii) Stock Loss	<u>96,000</u>
Corrected gross profit	<u>740,500</u>

Net Profit reported	\$456,379
Additional gross profit (\$24,000+\$96,000)	120,000
(i) Adding back the wrong depreciation	51,000
(i) Deducting the interest expense	(1,000)
(i) Depreciation on motor van (\$200,000*1/5)	(40,000)
(i) Impairment loss of motor van (\$160,000-\$100,000)	(60,000)
(ii) Stock Loss	(96,000)
(iii) Deferred expenditure (intangible assets)	<u>260,000</u>
	<u>\$690,379</u>

Sub Total: 5

(Total: 20 marks)

Question 4**Suggested solution:**

(a)		\$
	<u>Outflows</u>	
	Purchase cost of machine	3,200,000
	Carriage charge	5,000
	Installation cost	6,000
	Tax (\$300,000 x 17.5%)	52,500
	Increase in inventory	100,000
	Total outflows	3,363,500
	<u>Inflows</u>	
	Proceeds on sale of machinery	(300,000)
	Tax savings [(\$3,200,000 + \$5,000 + \$6,000) x 17.5%]	(561,925)
	Total inflows	(861,925)
	Net initial investment cost	2,501,575

(b)	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	
	\$	\$	\$	\$	
	<u>Cash Inflows/(Outflows)</u>				
	Increase in revenue	1,100,000	800,000	600,000	300,000
	Decrease/(Increase) in maintenance cost	(120,000)	(20,000)	70,000	80,000
	Decrease in other operating costs	90,000	80,000	20,000	10,000
	Scrap value of machine				120,000
	Tax on sale proceeds (\$120,000 x 17.5%)				(21,000)
	Net cash inflows	1,070,000	860,000	690,000	489,000

Alternative answer:

For end of year 4, flow back from inventory cashflow:

\$489,000+\$100,000=\$589,000

(c) Payback period

$$2 \text{ years} + \frac{\$2,501,575 - 1,070,000 - \$860,000}{\$690,000} \text{ year} \qquad \qquad \qquad 2.83$$

(d)	<u>Net Cash</u> <u>Flows</u> \$	<u>Discount</u> <u>Factor</u> \$	<u>Net Present</u> <u>Value</u> \$
Year 0	(2,501,575)	1.0000	(2,501,575)
Year 1	1,070,000	0.8929	955,403
Year 2	860,000	0.7972	685,592
Year 3	690,000	0.7118	491,142
Year 4	489,000	0.6355	<u>310,760</u>
			<u><u>(58,678)</u></u>

Alternative answer:

The Net cashflow in Year 4 = \$589,000 at the discount rate of 0.6355 giving the Yr4 present value of \$374,310.

The Net PV is \$4,872.

(e) The machine should not be purchased because it brings a negative NPV.

Alternative answer:

It is acceptable to purchase the machine because it has a marginally positive NPV.

- (f) (i) Timing of cash flows is ignored.
- (ii) Cash flows after the payback period is ignored.
- (iii) The standard for the payback period is arbitrary.

(Total: 20 marks)

Question 5

Suggested solution

(a)	Working Uniforms	School Uniforms \$
Selling price	<u>150</u>	<u>100</u>
Less: Direct labour	50	40
Direct labour	60	35
Variable overheads	<u>10</u>	<u>5</u>

Total variable costs	<u>120</u>	<u>80</u>
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Contribution per unit	<u>30</u>	<u>20</u>
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(b) Contribution margin for the order of working uniforms

= $(\$30 / \$150) \times 100\%$ 20%

Contribution margin for the order of school uniforms

= $(\$20 / \$100) \times 100\%$ 20%

(c) Fixed cost = $\$13 \times 1,000 + \$4 \times 500 + \$6 \times 1,500$ \$24,000

Contribution per batch in standard sales mix (2:1) = $\$30 \times 2 + \20×1 \$80

Break-even number of batches = $\$24,000 / \80 300

Break-even point of individual products in standard sales mix:

600 units of working uniforms, and

300 units of school uniforms

(d) Actual sales volume = $\$150 \times 1,000 + \100×500 \$200,000

Break-even sales volume = $\$150 \times 600 + \100×300 \$120,000

Margin of safety = $\$200,000 - \$120,000$ \$80,000

(e) \$

Materials A 6,500

Materials B 1,000

Skilled labour (20 x \$100 x 150%) 3,000

Unskilled labour (10 x \$50) **500**

Variable expenses 600

Opportunity cost for machine-hours (30 x \$65) 1,950

Selling price of products before conversion	<u>120,000</u>
Minimum price to be charged	<u>133,550</u>

- (f) Opportunity cost is defined as the value of the best alternative forgone.
Opportunity cost is relevant to decision making because:
- (i) Decision is concerned with choosing the best alternative.
 - (ii) The cost of the chosen action is the profit forgone from the best available alternative.

(Total: 20 marks)

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