

HONG KONG ASSOCIATION FOR BUSINESS EDUCATION
HONG KONG INSTITUTE OF VOCATIONAL EDUCATION (CHAI WAN &
TUEN MUN)

HONG KONG ADVANCED LEVEL EXAMINATION 2009

MOCK EXAMINATION
PRINCIPLES OF ACCOUNTS
A-LEVEL PAPER 2

1:30pm – 4:30pm (3 hours)

This paper must be answered in English

Instructions:

1. Answer **FOUR** questions in this paper: TWO compulsory questions in Section A (60%), and any TWO of the three questions in Section B (40%)
2. Write your answers for Section A & B in the answer book provided.
3. Show **all** your workings.

SECTION A

Answer **ALL** questions in this section. Each question carries 30 marks. Write all your answers in the answer book provided.

Question 1**Part A**

Fortune Electronics Ltd. manufactures two models of watches – Model A123 and Model Z890. The production process involves three departments, Molding, Assembly and Finishing. There are two service centres, A and B. Service centre A provides training for the whole company. Service centre B is responsible for inspecting the outputs of production departments to ensure that they are of high quality. For the year ended 31 December 2009, cost center expenses and other relevant information are budgeted as follows:

(i) Annual production and sales:

	Model A123	Model Z890
Production and sales	120,000 units	40,000 units
Unit selling price	\$80	\$115

(ii) Direct costs and resources usages required:

		Model A123	Model Z890
Direct material per unit		\$27	\$26
Direct labour per hour		\$4.5	\$9
Machine hours per unit	- Molding	3 hours	5 hours
	- Assembly	1 hour	2 hours
	- Finishing	1 hour	1 hour
Direct labour hours per unit	- Molding	2 hours	3 hours
	- Assembly	2 hours	1 hour
	- Finishing	3.5 hours	2.5 hours

(iii) Annual fixed production overhead costs:

		\$
Production departments	- Molding	1,430,000
	- Assembly	870,000
	- Finishing	833,000
Service cost centres	- Service A	200,000
	- Service B	179,000
		<u>3,512,000</u>

- (iv) Allocation of fixed production overhead costs:

<u><i>Production departments</i></u>	<u>Molding</u>	<u>Assembly</u>	<u>Finishing</u>
<i>Allocation bases</i>	Machine hours	Direct labour hours	Direct labour hours

- (v) Services provided by the service cost centres for the production departments are to be apportioned as follows:

	<u>Molding</u>	<u>Assembly</u>	<u>Finishing</u>	<u>Service A</u>	<u>Service B</u>
Service A	20%	40%	30%	-	10%
Service B	20%	55%	20%	5%	-

- (vi) It is the company's policy to re-apportion the costs of the service cost centres to other production departments by using the simultaneous equation method.

REQUIRED:

- (a) Allocate the costs of each service centre to the production departments. (5 marks)
- (b) Calculate the budgeted overhead absorption rate for each production department. (3 marks)
- (c) Prepare a statement showing the full unit cost and the annual budgeted profit or loss of the two models for the year ended 2009. (7 marks)

Part B

Roger Ltd. manufactures a product called “Zeno” which takes one process to complete. The company adopts the first-in-first-out method for its process costing system. The normal output of the process is 96% of the current period input. Loss exceeding the tolerated level should be treated as abnormal loss. The following information relates to the production process for the month of February 2009:

Production Costs:

Materials	\$3,336,597
Conversion costs	\$1,950,281

Quantities:

Opening work in progress	29,500 units	(consisting of materials \$678,245 and conversion costs \$300,152)
Opening finished goods	Nil	
Materials input	123,750 units	
Closing work in progress	36,000 units	
Closing finished goods	111,100 units	

The opening and closing work in progress were 90% complete as to conversion costs.

Materials are applied at the start of each process. Production loss will be identified when 60% of the production process is completed. Normal Loss will be absorbed into finished goods, closing work in progress and abnormal loss, if any.

The scrap value of the damaged items is \$23 per unit. 82% of the scrap value of normal loss is used to set off against the cost of materials while the balance is used to set off against the conversion costs.

During the month of February 2009, 110,000 units were sold at \$60 per unit.

REQUIRED:

- Prepare for Roger Ltd the Process account for the month of February 2009, with separate columns for the number of units and dollar amounts. (10 marks)
- Prepare an income statement to show the profit on “Zeno” for the same month.(5 marks)
[30 marks]

(iii)

A Human Resources Officer has provided the following data for hiring the required grade of labour:

<u>Standard rate per hour</u>	\$
Basic wage rate and benefit allowance per hour	46
Note: Benefit allowance at 15% of the basic wage	

The actual hourly rate was paid at \$50/ hour (inclusive of 15% benefit allowance).

Additional information:

iv)

Other budgeted expenses/ overheads were as follows:

	Budgeted Costs
Subcontracting expenses	Nil
Production overheads	\$ 31,500
Administrative overheads	\$100,000

It was found that the actual subcontracting expenses \$7,250 was related to the laboratory certification fee for the goods produced.

The actual production expenses were less than budget by \$2,100, because of the savings of repairs and maintenance costs. The actual administration expenses were \$1,800 more than budget, because of non-budget office cleaning service.

v)

The budgeted sales and production of 'A' for the week 1 to 5 was 3,500 units. The actual production was same as the budget. There was no closing materials and work-in-progress in week 5. The product has a budgeted selling price based on 22.5% mark up on standard unit cost (budgeted selling price rounded to whole dollar).

vi)

Manufacturing, trading, and profit and loss account

for the period ended week five	\$	\$
Sales (3,100 units at \$190 each)		589,000
Variable Costs		
Total materials costs	127,500	
Total labour costs	383,250	
Subcontracting expenses	7,250	
Less: Closing stock (400 units)	<u>(59,200)</u>	<u>(458,800)</u>
Contribution		130,200
Fixed costs		
Production overheads	29,400	
Administrative overheads	<u>101,800</u>	<u>131,200</u>
Net Losses		<u>(1,000)</u>

vii)

It was additionally confirmed that 400 units of the closing stock would be sold at a promotional price of \$145 due to adverse market conditions in the coming seventh week.

viii)

The management has been considering a change from marginal costing approach to absorption costing approach. It is agreed to absorb all cost variances and inventory adjustments in cost of goods sold.

REQUIRED:

- (a) Show the calculation of the standard cost per unit of product.
(Note: rounded to two decimal places.) (3 marks)
- (b) What are the purposes to establish a standard cost system? (2 marks)
- (c) Prepare the variance analysis of sales, direct material and direct labour. (9 marks)
- (d) Re-construct the manufacturing, trading and profit and loss account using the standard absorption costing method for the period ended week 5. (8 marks)
- (e) 'Absorption costing will always produce a higher profit than marginal costing.' Explain whether you agree to the statement or not. Is it possible that the profit reported under both costing methods will be the same? (3 marks)

The company has been preparing the budget of one of its cost centres. The following actual cost data were collected under 3 activity levels.

<u>Activity Level</u>	7,000 units	10,000 units	11,000 units	
	\$	\$	\$	Cost nature
Depreciation				
-equipment	80,000	80,000	90,000	Step-fixed
Power	?	5,000	5,300	Semi-variable
Rent & rates	3,000	3,000	3,000	?
Wages	10,500	15,000	?	Variable
Repairing cost	240	?	320	Mixed
Supervision	20,000	?	?	Fixed

REQUIRED:

(f) Calculate the total budgeted cost of the cost centre at the activity level of 9,000 units.

(5 marks)

[30 marks]

SECTION B

Answer any **TWO** questions from this section. Each question carries 20 marks.

Write all your answers in the answer book provided.

Question 3

The gross profit and net profit of Mr. Chung for the year ended 31 December 2008 amounted to \$620,500 and \$456,379 respectively. There was an undesirable trend that the mark-up percentage decreased from last year of 30% to current year of 25%. You, as the accountant, have doubts over the accounting treatments of the following:

- (i) The motor van was purchased at \$200,000 on 1 January 2008 and four equal annual instalment of \$51,000 would be paid at the end of each year. The company adopts a straight line method for the motor van with an estimated useful life of five years and no residual value would be recovered. It was subsequently found that the recoverable amount of the van decreased to \$100,000 at the year end of 2008. Mr. Chung charged only the annual instalment to profit and loss account as depreciation expenses for the year ended 31 December 2008.

(6 marks)

- (ii) The internal auditor of a company took a physical stock taking at the year end of 31 December 2008. He discovered that some of stocks valued at selling price of \$120,000 disappeared without reasons. After an investigation, the internal auditor suggested the case should be reported to the police. Since the closing stock has already excluded the amount of \$120,000, no entries have been made to adjust the net profit reported.

(4 marks)

- (iii) Mr. Chung has incurred \$260,000 at an initial stage to develop a new tailor-made accounting software system for internal use during the year ended 31 December 2008. The cost of training for operating the new system is \$20,000 spent during the year 2008. The financial controller charged all the amounts to the profit and loss account. Although he believes that the system will not increase the earnings of the business but the efficiency of business will be improved in the future and he decides to use the system in coming financial years.

(5 marks)

REQUIRED:

- (a) Identify which accounting concept(s) should be applicable to each of the above items, and advise Mr. Chung what appropriate accounting treatment(s) for each item should be made. Explain your reason(s).
- (b) Restate the gross profit and net profit of Mr. Chung for the year ended 31 December 2008 after taking into your accounting adjustments to the above items. (5 marks)

[20 marks]

Question 4

Isaac Limited is a manufacturing company and is considering purchasing a new machine for manufacturing processes at \$3,200,000 to replace an old machine of a similar function. It is estimated that the old machine can be sold at a profit as follows:

	\$
Sale proceeds	300,000
Net book value	<u>100,000</u>
Profit on disposal	<u><u>200,000</u></u>

As regards the new machine, it is estimated that it has a 4-year useful life. Its scrap value is estimated to be \$120,000 after 4 years. On acquisition, Isaac Limited has to pay a carriage charge of \$5,000 and installation cost of \$6,000. In addition, the new machine requires an increase in inventory of \$100,000.

Under the Hong Kong taxation system, *capital expenditures* on acquisition of machines for manufacturing processes are fully deductible for profits tax purpose and therefore will decrease the profits tax cash payment. On the other hand, *proceeds on sale* of machines for manufacturing processes are fully taxable and therefore will increase the profits tax cash payment. The annual depreciation charged in the income statement has no tax effects. The tax rate is assumed to be 17.5% constantly. It is also assumed that the tax effects realise as soon as the machines are purchased and sold.

The new machine will have the following impacts on revenues and operating costs (net of tax effects):

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</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
Increase in annual depreciation	100,000	100,000	100,000	100,000
Decrease in other operating costs	90,000	80,000	20,000	10,000

For the purpose of investment appraisal, the cost of capital of 12% is to be used.

REQUIRED:

- (a) Calculate the net initial investment cost for the machine acquisition. (4 marks)
 - (b) Calculate the net cash flows for each year from year 1 to year 4. (5 marks)
 - (c) Calculate the payback period for the investment. The answer should be expressed in number of years, correct to 2 decimal places. (3 marks)
 - (d) Calculate the net present value for the investment. (3 marks)
(You must use the financial table provided.)
 - (e) State whether you would recommend purchase of the new machine and explain the rationale. (2 marks)
 - (f) State the drawbacks of payback period approach in comparison with net present value approach. (3 marks)
- [20 marks]

Question 5

Moses Limited is a small company engaged in manufacturing uniforms for schools and business organizations.

In February 2009, the company started and completed two orders for manufacturing 1,000 units of working uniforms for a group of restaurants and 500 units of school uniforms for an educational institute respectively. The company did not undertake other manufacturing activities during the month. The selling prices and costs attributable to each of the two products are exhibited as follows:

	Working Uniforms \$	School Uniforms \$
Selling price per unit	<u>150</u>	<u>100</u>
	\$	\$
Direct materials	50	40
Direct labour	60	35
Variable overheads	10	5
Direct avoidable fixed costs	13	4
Indirect common fixed costs	<u>6</u>	<u>6</u>
Cost per unit	<u><u>139</u></u>	<u><u>90</u></u>

The fixed costs had been absorbed into the products on the basis of actual units produced during the month. In addition, the company was producing the products at standard sales mix during the month.

REQUIRED:

- (a) Calculate the contribution per unit for each of the orders. (2 marks)
- (b) Calculate the contribution margin ratio for each of the orders. (2 marks)
- (c) Calculate the break-even point in units of working uniforms and also school uniforms for February 2009. (4 marks)
- (d) Calculate the margin of safety in dollars in February 2009. (2 marks)

Owing to the impacts of financial tsunami, the group of restaurants closed down in early-March 2009 without taking delivery of the uniforms. There is another potential customer who will buy the whole batch of the uniforms provided that conversion work is done on them.

The cost on the conversion work is estimated as follows:

	<u>Notes</u>	\$
Materials A	(i)	6,000
Materials B	(ii)	900
Skilled labour (20 hours at \$100 each)	(iii)	2,000
Unskilled labour (10 hours at \$50 hours each)	(iv)	500
Variable expenses	(v)	600
Depreciation of machine	(vi)	1,000
Other fixed overheads	(vii)	1,200
		<u>12,200</u>

The following notes are relevant:

- (i) Materials A are currently in the inventory. They could be used in other production jobs. The original cost of the materials is \$6,000 whilst the replacement cost is \$6,500.
- (ii) Materials B are not held in inventory. They would have to be purchased in bulk at a cost of \$1,000. 90% of the materials purchased would be used in the conversion work whilst the remaining 10% have to be scrapped.
- (iii) Skilled labour is currently paid at \$100 for each hour. If the conversion work is taken up, skilled labour has to work overtime and the extra overtime allowance is 50% on the normal rate.
- (iv) Unskilled labour is currently working well below full capacity.
- (v) Variable expenses are incurred for operating the machine.
- (vi) Spare machine-hours can be leased to outside companies at a rental of \$80 per machine-hour, giving a contribution of \$65 per machine-hour to the company. The conversion work requires 30 machine-hours.
- (vii) Other fixed overheads are absorbed on the basis of pre-determined overhead rate.

In the existing conditions without conversion, the uniforms can be sold at \$120,000.

REQUIRED:

- (e) Calculate the minimum price the potential customer should be charged. (7 marks)
 - (f) Define opportunity cost and explain its relevance to decision making. (3 marks)
- [20 marks]

END OF PAPER

APPENDIX

NT VALUE TABLE
 $NV = I / (1+r)^t$

interest rates (r)	8%	9%	10%	11%	12%	13%	14%	15%	Year (t)
	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696	1
	0.8573	0.8417	0.8264	0.8116	0.7972	0.7831	0.7695	0.7561	2
	0.7938	0.7722	0.7513	0.7312	0.7118	0.6931	0.6750	0.6575	3
	0.7350	0.7084	0.6830	0.6587	0.6355	0.6133	0.5921	0.5718	4
	0.6806	0.6499	0.6209	0.5935	0.5674	0.5428	0.5194	0.4972	5
	0.6302	0.5963	0.5645	0.5346	0.5066	0.4803	0.4556	0.4323	6
	0.5835	0.5470	0.5132	0.4817	0.4523	0.4251	0.3996	0.3759	7
	0.5403	0.5019	0.4665	0.4339	0.4039	0.3762	0.3506	0.3269	8
	0.5002	0.4604	0.4241	0.3909	0.3606	0.3329	0.3075	0.2843	9
	0.4632	0.4224	0.3855	0.3522	0.3220	0.2946	0.2697	0.2472	10
	0.4289	0.3875	0.3505	0.3173	0.2875	0.2607	0.2366	0.2149	11
	0.3971	0.3555	0.3186	0.2858	0.2567	0.2307	0.2076	0.1869	12
	0.3677	0.3262	0.2897	0.2575	0.2292	0.2042	0.1821	0.1625	13
	0.3405	0.2992	0.2633	0.2320	0.2046	0.1807	0.1597	0.1413	14
	0.3152	0.2745	0.2394	0.2090	0.1827	0.1599	0.1401	0.1229	15

RE VALUE TABLE
 $FV = I (1+r)^t$

interest rates (r)	8%	9%	10%	11%	12%	13%	14%	15%	Year (t)
	1.0800	1.0900	1.1000	1.1100	1.1200	1.1300	1.1400	1.1500	1
	1.1664	1.1881	1.2100	1.2321	1.2544	1.2769	1.2996	1.3225	2
	1.2597	1.2950	1.3310	1.3676	1.4049	1.4429	1.4815	1.5209	3
	1.3605	1.4116	1.4641	1.5181	1.5735	1.6305	1.6890	1.7490	4
	1.4693	1.5386	1.6105	1.6851	1.7623	1.8424	1.9254	2.0114	5
	1.5869	1.6771	1.7716	1.8704	1.9738	2.0820	2.1950	2.3131	6
	1.7138	1.8280	1.9487	2.0762	2.2107	2.3526	2.5023	2.6600	7
	1.8509	1.9926	2.1436	2.3045	2.4760	2.6584	2.8526	3.0590	8
	1.9990	2.1719	2.3579	2.5580	2.7731	3.0040	3.2519	3.5179	9
	2.1589	2.3674	2.5937	2.8394	3.1058	3.3946	3.7072	4.0456	10
	2.3316	2.5804	2.8531	3.1518	3.4785	3.8359	4.2262	4.6524	11
	2.5182	2.8127	3.1384	3.4985	3.8960	4.3345	4.8179	5.3503	12
	2.7196	3.0658	3.4523	3.8833	4.3635	4.8980	5.4924	6.1528	13
	2.9372	3.3417	3.7975	4.3104	4.8871	5.5348	6.2613	7.0757	14
	3.1722	3.6425	4.1772	4.7846	5.4736	6.2543	7.1379	8.1371	15