UNIVERSITI SAINS MALAYSIA

Final Examination
Semester I, Academic Session 1994/95

October/November 1994

AGW512 - PRINCIPLES OF ACCOUNTING

Time: [3 hours]

Instructions

Please make sure that this examination paper consists of TEN printed pages before you begin.

Answer **FIVE** questions only.

Q1. a. The Banting Corporation manufactures one product and accounts for costs by a job order system. You have obtained the following information for the year ended December 31 1993 from the corporation's books and records:

(i) Total manufacturing cost added during 1993 (sometimes called cost to manufacture) was RM1,000,000 on the basis of actual direct material, actual direct labour, and applied factory overhead on actual direct labour cost.

(ii) Cost of goods manufactured was RM970,000 also on the basis of actual direct material, actual direct labour, and applied factory overhead.

(iii) Factory overhead was applied to work-in-progress inventory at 75% of direct labour cost. Applied factory overhead for the year was 27% of the total manufacturing cost.

(iv) Beginning work-in-progress inventory, January 1, was 80% of ending work-in-progress, December 31.

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Required

Prepare a formal statement of cost of goods manufactured for the year ended December 31 1993 for Banting Corporation. Use actual direct material used, actual direct labour, and applied factory overhead. Show supporting computations in good form.

[12 marks]

b. "As the focus of a report changes from a larger cost objective to a smaller one, more and more costs become indirect and subject to allocation procedures". Comment on this statement.

[8 marks]

Q2. Kathy Ibrahim has just been promoted to a new position in the accounting department of Peninsular Wholesale Corporation. To celebrate, she has taken her husband out to dinner. On arriving home later in the evening, Kathy is horrified to find that her pet had a good time eating some paperwork that was needed in a loan presentation the following morning. Comel completely destroyed Peninsular's income statement. In addition, he partially consumed the firm's balance sheet and some cash receipts and payments information. Kathy was able to salvage the following:

	31/12/92	31/12/93
Cash	RM 19,800	RM 25,500
Accounts receivable	68,800	63,600
Merchandise inventory	115,700	121,400
Equipment (net of accumulated depreciation)	25,100	22,900
Accounts payable	70,400	75,300

All merchandise purchases and sales were made on account. The were no purchases or sales of equipment during 1993. Operating expenses, except for depreciation, were paid as incurred. Fragmented evidence left by Comel showed the following:

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Payments to suppliers for merchandise amounted to RM421,100.
Receipts from customers on account amounted to RM589,400.
The owners had withdrawn RM46,000 during the year.

Required

Using the accrual basis of accounting, prepare the 1993 income statement of Peninsular Wholesale Corporation.

[20 marks]

Q3. Ogwood Company is a small manufacturer of wooden households items. Al Razi, corporate controller, plans to implement a standard cost system for Ogwood. Razi has information from several co-workers that will assist him in developing standards for Ogwood's products.

One of the Ogwood's products is a wooden cutting board. Each cutting board requires 1.25 board feet of lumber and 12 minutes of direct labour time to prepare and cut the lumber. The cutting boards are inspected after they are cut. Because they are made of a natural material that has imperfections, one board is normally rejected for each five that are accepted. Four rubber footpads are attached to each good cutting board. A total of 15 minutes of direct labour time is required to attach all four footpads and finish each cutting board. The lumber for the cutting boards costs RM3 per board foot, and each footpad costs RM.05. Direct labour is paid at the rate of RM8 per hour.

Required

a. Develop the standard cost for the direct cost components of the cutting board. For each direct cost component, the standard cost should identify the standard quantity/time, standard price/rate and standard cost per unit.

b. Identify the advantages of implementing a standard cost system.

c. Explain the role of each of the following persons in developing standards:

- Purchasing manager
- Industrial engineer
- Cost accountant

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d. What is the difference, if any, between standard cost and budgeted cost with respect to factory overheads?

[20 marks]

Q4. The president of Beth Corporation, which manufactures tape decks and sells them to producers of sound reproduction systems, anticipates a 10 percent wage increase for manufacturing employees (variable labour) on January 1 of next year. No other changes in costs are expected. Overhead will not change as a result of the wage increase. The president has asked you to assist in the development of a reasonable product strategy for next year.

You are satisfied by regression analysis that volume is the primary factor affecting costs and have separated the mixed costs into their fixed and variable components. You also observe that the beginning and ending inventories are never materially different. Current operating capacity is 5,300 units. Below are the current year data assembled for your analysis.

Current selling price per unit	RM80.00
Variable cost per unit:	
Material	RM30.00
Labour	RM12.00
Overhead	RM 6.00
Total	RM48.00

Annual sales volume is 5,000 units. Fixed costs totaled RM51,000.

<u>Required</u>

a. What increase in the selling price is necessary to cover the 10 percent wage increase and still maintain the current contribution margin ratio?

b. How many tape decks must be sold to maintain the current net income if the sales price remains at RM80.00 and the 10 percent wage increase goes into effect?

c. The president believes that an additional RM190,000 of machinery (to be depreciated at 10 percent annually) will increase present capacity by 30 percent. If all tape decks produced can be sold at the present price and the wage increase goes into effect, how would the estimated net income before and after capacity is increased compare? Prepare computations of estimated net income before and after expansion.

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d. Explain the importance of two assumptions required in a C-V-P analysis that are explicitly mentioned in the question.

e. Briefly discuss the concept of multiproduct C-V-P analysis and the assumptions underlying the computations of individual product break even-points.

[20 marks]

Q5. The Bernom Corporation, which produces and sells to wholesalers a highly successful line of sun lotions and insect repellents, has decided to diversify to stablise sales throughout the year. A natural area for the company to consider is the production of haze lotions and creams to prevent chapped skin.

After considerable research, a haze product line has been developed. Because of the conservative nature of the company management, however, Bernom's president has decided to introduce only one of the new products. If the product is a success, further expansion in future years will be initiated.

The product selected (called Hazz-Off) is a skin lotion that will be sold in a toothpaste-type tube. The product will be sold to wholesalers in boxes of 24 tubes for RM8 per box. Because of available capacity, no additional fixed charges will be incurred to produce the product. A RM100,000 fixed charge will be absorbed by the product, however, to allocate a fair share of the company's present fixed costs to the new product.

Using the estimated sales and production of 100,000 boxes of Hazz-Off as the expected volume, the accounting department has developed the following costs per box:

Direct labor	RM2.00
Direct material	3.00
Total overhead	1.50
Total	RM6.50

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Bernom has approached a manufacturer to discuss the possibility of purchasing the tubes for Hazz-Off. The purchase price of the empty tubes from the manufacturer would be RM0.90 per 24 tubes. If the Bernom Corporation accepts the purchase proposal, it is predicted that direct labour and variable overhead cost would be reduced by 10% and direct material cost would be reduced by 20%.

Required

a. Should the Bernom Corporation make or buy the tubes? Show calculations to support your answer.

b. What would be the maximum purchase price acceptable to the Bernom Corporation for the tubes? Support your answer with an appropriate explanation.

c. Instead of sales of 100,000 boxes, revised estimates show sales volume at 125,000 boxes. At this new volume, additional equipment, at an annual rental of RM10,000 must be acquired to manufacture the tubes. This incremental cost would be the only additional fixed cost required even if sales increased to 3000,000 boxes. (The 300,000 level is the goal for the third year of production.) Under these circumstances, should the Bernom Corporation make or buy the tubes? Show calculations to support your answer.

d. The company has the option of making and buying at the same time. What would be your answer to Requirement (c) if this alternative were considered? Show calculations to support your answer.

e. What nonquantifiable factors should the Bernom Corporation consider in determining whether they should make or buy the toothpaste-type tubes?

[20 marks]

Q6. The new printing department provides printing services to the other departments of New Age Advertising, Inc. Before the establishment of the in-house printing department, other departments contracted with external printers for their printing work. The New Age printing policy is that using department are charged for the variable printing costs on the basis of number of pages printed. Fixed costs are recovered in pricing of external jobs.

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The first year's budget for the printing department was based on the department's expected total costs divided by the planned number of pages to be printed.

The projected annual number of pages to be printed was 840,000, and total variable costs were budgeted to be RM840,000. Most government accounts and all internal jobs were expected to use only single colour printing. Variable costs were estimated based on the average variable cost of composing and printing a two-colour page that is one-fourth graphics and three-fourths text. The amount of graphics also affects prepress or layout work. The expected annual costs for each division were as follows:

DEPARTMENT	PLANNED PAGES PRINTED	VARIABLE COST PER PAGE	BUDGETED CHARGES
Government accounts	180,000	RM1	RM180,000
Commercial accounts	600,000	RM1	RM600,000
Central administration	60,000	RM1	RM 60,000
Total	840,000		RM840,000

After the first month of using the internal printing department, the printing department announced that its variable cost estimate of RM1 per page was too low. The first month's actual cost were RM96,000 to print 80,000 pages.

Government accounts	18,000 pages
Commercial accounts	55,000
Central administration	7,000

Three reasons were cited for higher than expected costs: All departments were using more printing services than planned, and government and internal jobs were using more four-colour printing and more graphics than expected. The printing department also argued that additional four-colour printing equipment would have to be purchased if demand for four-colour printing continued to grow.

Required

(a) Compare the printing department actual result, static budget, and flexible budget for the month just completed.

(b) Discuss possible reasons why the printing department static budget was inaccurate.

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(c) An activity-based costing (ABC) study completed by a consultant indicated that printing costs are driven by number of pages (@ RM.30 per page), number of colours (@ RM.25 per colour per page), and hours of prepress (layout) work (RM40 per hour).

(i) Discuss the likely effects of using the ABC results for budgeting and control of printing department use.

(ii) Discuss the assumptions regarding cost behaviour implied in the ABC study results.

(iii) Central administration accounts during the first month (7,000 pages) used four colours per page, and required 12 hours of prepress work. Compare the cost of the government accounts under the old and the proposed ABC system.

[20 marks]

Q7. a. The Welding process centre of Kolb Inc. uses the FIFO inventory method. Units are transferred from Welding to Assembly. The production cost data for Welding are as follows:

Beginning work in process is 8,000 units with all materials and 75 percent conversion. Beginning inventory costs include RM48,800 for preceding department costs, RM11,200 for materials, RM12,900 for labour, and RM18,000 for overhead. During the month 40,000 units are transferred into the process centre, consisting of preceding department costs of RM248,000, material costs of RM60,000, direct labour costs RM78,000, and applied overhead costs of RM50,700. Ending work in process for March is 4,000 units with all materials and 25 percent conversion.

<u>Required</u>

(i) Prepare the March cost of production report for welding.

(ii) Determine the amount of current period manufacturing cost incurred in Welding during March.

(iii) Compute the unit cost for current period preceding department costs that will appear in the March cost of production report for the Assembly Department.

[14 marks]

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b. Briefly describe the manufacturing process in which

(i) a job order costing method is generally used,

(ii) a step down method of service (supporting) departments overhead cost allocation ought to be used.

[6 marks]

Q8. The emergency room at University Hospital uses a flexible budget based on patients seen as a measure of activity. An adequate staff of attending and on-call physicians must be maintained at all times, so physicians scheduling is unaffected by patient activity. Nurse scheduling varies as volume changes, however. A standard of. 5 nurse-hours per patient visit was set. Average hourly pay for nurses is RM12, ranging from RM7 to RM15 per hour. All materials are considered to be supplies, a part of overhead; there are no direct materials. A statistical study showed that the cost of supplies and other variable overhead is more closely associated with nurse-hours than with patient visits. The standard for supplies and other variable overhead is RM8 per nursing hour.

The head physician of the emergency room unit, Razali Hamzah, is responsible for control of costs. During December the emergency room unit treated 3,750 patients. The budget and actual costs were as follows:

	Budget	Actual	Variance
Patient visits	3,200	3,750	550
Nursing hours	1,600	1,940	340
Nursing cost	RM19,200	RM24,950	RM5,750
Supplies and other variable overhead	RM12,800	RM15,015	RM2,215
Fixed costs	RM78,000	RM78,000	0
Total cost	RM110,000	RM117,965	RM7,965

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Required

a. Calculate price and usage variance for nursing costs.

b. Calculate spending and efficiency variances for supplies and other variable overhead.

c. Dr. Razali has been asked to explain the variances to the Chief Executive Officer. Provide possible explanations.

d. Name the nonfinancial measures of quality and indicate what they are designed to measure in terms of emergency service quality.

[20 marks]

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