

## 淡江大學八十七學年度碩士班入學考試試題

系別：會計學系

科目：成本與管理會計

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一、24%

Brooks Corporation produces three products, Alpha, Beta, and Gamma. Alpha and Gamma are joint products; Beta is a by-product of Alpha. No joint cost is to be allocated to the by-product. The production processes for a given year are as follows:

- (a) In Department 1, 110,000 pounds of material Rho are processed, at a total cost of \$120,000. After processing, 60% of the units are transferred to Department 2, and 40% of the units (now Gamma) are transferred to Department 3.
- (b) In Department 2, the material is further processed at a total additional cost of \$38,000. Seventy percent of the units (now Alpha) are transferred to Department 4 and 30% emerge as Beta, the by-product, to be sold at \$1.20 per pound. The marketing expense related to Beta is \$8,100.
- (c) In Department 4, Alpha is processed at a total additional cost of \$23,660. After processing, Alpha is ready for sale at \$5 per pound.
- (d) In Department 3, Gamma is processed at a total additional cost of \$165,000. In this department, a normal loss of units of Gamma occurs, which equals 10% of the good output of Gamma. The remaining good output is sold for \$12 per pound.

Required:

- (1) Prepare a schedule showing the allocation of the \$120,000 joint cost between Alpha and Gamma, using the market value at split-off point and treating the net realizable value of Beta as an additional to the sales value of Alpha.
- (2) Prepare a statement of gross profit for Alpha, independent of the answer to requirement 1, assuming that:
  - (a) \$102,000 of total joint cost is appropriately allocated to Alpha.
  - (b) 48,000 pounds of Alpha and 20,000 pounds of Beta are available for sale.
  - (c) During the year, sales of alpha were 80% of the pounds available for sale. There was no beginning inventory.
  - (d) The net realizable value of Beta available for sale is to be deducted from the cost of producing Alpha. The ending inventory of Alpha is to be based on the net cost of production.
  - (e) All other costs, sales prices, and marketing expenses are those presented in the facts of the original problem.

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二、28%

Dayton Company has been producing component parts and assemblies for use in the manufacture of microcomputers. The company plans to introduce a magnetic-tape-cartridge-backup unit for IBM-compatible microcomputers in the near future.

Dayton's Research and Development(R&D) and Market Research departments have been working on this project for an extended period. The development costs of the two departments incurred to date amounted to \$1,500,000. R&D created several alternative designs for the backup units. Three of the designs were approved for development into prototypes, and from these only one will be manufactured and sold. Market Research has determined that the appropriate selling price would be \$540 per unit, regardless of the model selected.

There is uncertainty about demand. Three alternative levels of demand are possible—light, moderate, and heavy. Dayton can meet all demand levels because its production facility is currently operating below full capacity.

Level of Demand	Unit Sales	Probability of Event
Light	20,000	0.25
Moderate	80,000	0.60
Heavy	120,000	<u>0.15</u>
		<u>1.00</u>

Variable manufacturing overhead is allocated to Dayton's products using a plantwide rate of 250% of direct manufacturing labor costs. Dayton's engineering and accounting staffs have worked together to develop manufacturing cost estimates for each of the three model designs:

	Model A	Model B	Model C
Unit Variable Costs			
Direct materials	\$ 150	\$ 100	\$ 114
Direct manufacturing labor	40	50	48
Manufacturing overhead	100	125	120
Marketing	<u>140</u>	<u>140</u>	<u>140</u>
Total unit variable cost	<u>\$430</u>	<u>\$415</u>	<u>\$422</u>
Other Costs			
Fixed manufacturing overhead	\$1,000,000	\$1,400,000	\$1,300,000
Fixed marketing costs	2,000,000	3,100,000	2,800,000
Development costs(already incurred)	1,500,000	1,500,000	1,500,000

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Dayton has decided to use an expected monetary value choice criterion in its analysis of which of the three prototypes it will manufacture and sell.

Required

1. Compute the unit contribution margin of Model A, B and C.
2. Which prototype should Dayton Company manufacture and sell? (列示計算)

三、24%

Jinwa Corporation sells two brands of wine glasses-Plain and Chic. Jinwa provides the following information for sales in the month of April 1998:

Static budget total contribution margin	\$5,600
Budgeted units to be sold of all glasses in April 1998	2,000 units
Budgeted contribution margin per unit of Plain	\$2 per unit
Budgeted contribution margin per unit of Chic	\$6 per unit
Total sales-quantity variance	\$1,400 Unfavorable
Actual sales-mix percentage of plain	60%

Required:

1. Calculate the sales-quantity variances for each product for April 1998.
2. Calculate the individual product and total sales-mix variances for April 1998.
3. Calculate the individual product and total sales-volume variances for April 1998.

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## 四、24%

The Kryton Company, which is under contract to the U.S. Navy, assembles troop deployment boats. As part of its research program, it completes the assembly of the first of a new model(PT007) of deployment boats. The Navy is impressed with the PT007. It requested that Kryton submit a proposal on the cost of producing another seven PT007s.

The accounting department at Kryton reports the following cost information for the first PT007 assembled by Kryton:

Direct Material	\$100,000
Direct manufacturing labor(10,000 hours @\$30)	300,000
Tooling Cost(Tooling can be reused at no extra costs, since all its cost has been assigned to the first deployment boat.)	50,000
Variable manufacturing overhead (\$20 per direct manufacturing-labor hour)	200,000
Other manufacturing overhead (Allocated at 25% of direct manufacturing labor cost)	<u>75,000</u>
	<u>\$725,000</u>

Kryton uses an 85% cumulated average-time learning curve as a basis for forecasting direct manufacturing labor-hours on its assembling operations.

### Required

1. Prepare a prediction of the total costs for producing the seven PT007s for the Navy.
2. What is the difference between (a) the predicted total costs for producing the seven PT007s.in requirement 1 and (b) the predicted total costs for producing the seven PT007s assuming there is no learning curve for direct manufacturing labor-that is, for (b) assume a linear function for direct labor-hours and units produced.