

# 國立臺北大學 104 學年度碩士班一般入學考試試題

系（所）組別：會計學系

科 目：成本與管理會計學

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1. HS Company specializes in custom cabinet work. HS uses many different types of machines, which are repaired and replaced at regular intervals in order to ensure low-cost, high-quality operations.

The factory manager, Nero Oakie, recently authorized the purchase of an \$85,000 automated lathe that will be used to make spindles for stairways. This machine has just been installed. At the projected level of operations, this machine is expected to last for 10 years and have annual operating costs of \$40,000. The machine is assumed to be worthless at the end of its life.

Nero is concerned about a recent development. Susie Company has just announced the availability of a new machine that performs the same tasks as the machine just installed at HS. The Susie machine would cost \$130,000, last for 10 years, and have annual operating costs of \$35,000. This Susie machine will provide for improved quality that Nero expects will increase operating margins by \$10,000 a year. The machine just installed has a value, net of salvage, of \$50,000. The new machine would have no salvage value in 10 years.

Nero is currently paid a salary of \$60,000 and receives a bonus of one-half of one percent of corporate net income. Nero estimates that he will remain with HS for about two more years. At that time he expects to achieve a promotion and raise by moving to another company.

In the questions that follow, ignore income taxes and assume that HS's pre-tax required return is 12%. The company uses the straight-line method to compute depreciation. (The present value of an annuity of \$1 per year for 10 years when the cost of capital is 12% is 5.65)

## Required

- (1) Should the company keep the newly installed machine or buy the Susie machine? (10%)
- (2) Which machine would Nero prefer? (10%)
- (3) What are the motivation problems in the above story? (10%)

2. Elly Industries is a multiproduct company that currently manufactures 30,000 units of Part MR24 each month for use in production. The facilities now being used to produce Part MR24 have a fixed monthly cost of \$150,000 and a capacity to produce 84,000 units per month. If Elly were to buy Part MR24 from an outside supplier, the facilities would be idle, but its fixed costs would continue at 40 percent of its present amount. The variable production costs of Part MR24 are \$11 per unit.

## Required

- (1) If Elly Industries continues to use 30,000 units of Part MR24 each month, it would realize a net benefit by purchasing Part MR24 from an outside supplier only if the supplier's unit price is less than how much? (10%)
- (2) If Elly industries can obtain Part MR24 from an outside supplier at a unit purchase price of \$12.875, what is the monthly usage at which it will be indifferent between purchasing and making Part MR24? (10%)

3. Company X is a real estate brokerage chain. It has two major divisions: Kaohsiung and Taoyuan. The company's results for 2014 are as follows:

	Kaohsiung	Taoyuan
Long-term assets	\$550,000	\$550,000
Current assets	\$50,000	\$250,000
Current Liabilities	\$100,000	\$200,000
Operating Revenue	\$600,000	\$750,000
Operating costs	\$150,000	\$250,000
Imputed cost of the investment	\$210,000	\$280,000
Required rate of return	35%	35%

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Company X has two sources of funds: long term debt with a market and book value of \$4,000,000 issued at an interest rate of 15%, and equity capital that has a market value of \$6,000,000. The cost of equity capital for Company X is 14%, and its tax rate is 30%. Company X uses the residual income and economic value added measures to evaluate the performance of its divisions. Each division manager's 2014 bonus will equal to 10% of division performance.

## Required:

Which performance measures for evaluation a division's performance will the manager of Kaohsiung prefer and what's his bonus under the measures he prefers. Show your calculations. (10%)

4. Time-driven ABC (TDABC) is used by the customer service department of Company Y for estimating customer profitability and managing its unused capacities. The department performs three activities: performing credit checks, handling customer inquiries, and processing customer orders. Managers determine that it takes 50 minutes to perform a credit check, 44 minutes to handle an inquiry, and 8 minutes to process an order. The department's total costs of supplying capacity-720,000 minutes are \$576,000 for its first fiscal quarter of 2015. Data for the department's first fiscal quarter of 2015 are as follows:

Activity	% of Time Spent	Activity Quantity	Cost Driver
Perform credit checks	30%	4,000	Number of credit checks
Handle inquiries	10%	2,000	Number of inquiries
Process orders	70%	50,000	Number of orders

The customer service department of Company Y has only two customers: A and B. Information relating to each customer for its first fiscal quarter of 2015 follows:

	Customer A	Customer B
Total Revenue	\$350,000	\$300,000
Number of credit checks	1,800	2,200
Number of inquiries	500	1,500
Number of orders	30,000	20,000

## Required:

- (1) Use the TDABC information to compute the operating income of each customer in the first fiscal quarter of 2015. (10%)  
(2) Company Y recently considered hiring a consultant for \$40,000 to help them eliminate their total unused capacity for one quarter. Should Company Y hire the consultant? Show your calculations. (5%)

5. Company Z has two departments. The production starts in the Assembly department and is completed in the Finishing department. Conversion costs are incurred proportionally throughout the production processes in both departments. Inspection occurs when units are 60% converted in both departments. Spoiled units are disposed of at zero net disposal value in these two departments. The company uses the first-in, first-out process-costing method for the Assembly department and the weighted-average process-costing method for the Finishing department.

Materials are added at the beginning of the process in the Assembly department. The beginning inventory on February 1 included \$12,000 for materials and \$4,000 for conversion costs in the Assembly department. Overhead is applied at the rate of 50% of direct manufacturing labor costs. Spoilage is 4% of the good units passing inspection and all spoilage is considered abnormal. The cost per unit in January for the Assembly department is \$3.40 per unit regardless of which process costing method is used in determining costs.

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Additional materials are added when the process is 20 percent in the Finishing department. Overhead in the Finishing department is equal to direct manufacturing labor costs. Normal spoilage is 2% of all units passing inspection in the Finishing department. The work-in-process beginning inventory in the Finishing department on February 1 was \$128,000.

Additional information about the two departments in February follows:

	<u>Assembly</u>	<u>Finishing</u>
Beginning work-in-process units	20,000	20,000
Percentage completion of beginning work in process units	20%	10%
Units started this period	40,000	?
Units transferred this period	50,000	50,000
Ending work-in-process units	?	10,000
Percentage completion of ending work in process units	40%	25%
Material costs added	\$60,000	\$210,000
Direct manufacturing labor	\$33,600	\$28,500

**Required:**

- (1) Company Z's engineers have devised a method that would improve quality and costs of abnormal spoilage that would be saved in the Assembly department. The modification would cost \$12,000 a month. Should Company Z implement the new method? Show your calculations. (10%)
- (2) What is the cost of goods completed and transferred out in the Finishing department? Show your calculations. (15%)

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