

系所組別 會計學系甲組
 考試科目 成本與管理會計學

考試日期：0306 · 節次：3

※ 考生請注意：本試題 可 不可 使用計算機

I. Multiple-Choice Questions (30%): Select the best answer for each question (3% for each question)

- Use the following to answer questions 1-2:

The Sasita Corporation manufactures two types of vacuum cleaners, the ZENITH for commercial building use and the House-Helper for residences. Budgeted and actual operating data for the year 20x3 were as follows:

<u>Static Budget</u>	<u>ZENITH</u>	<u>House-Helper</u>	<u>Total</u>
Number sold	5,000	20,000	25,000
Contribution margin	\$1,500,000	\$3,000,000	\$4,500,000
<u>Actual Results</u>	<u>ZENITH</u>	<u>House-Helper</u>	<u>Total</u>
Number sold	4,000	28,000	32,000
Contribution margin	\$1,280,000	\$3,920,000	\$5,200,000

Prior to the beginning of the year, a consulting firm estimated the total volume for vacuum cleaners of the ZENITH and House-Helper category to be 250,000 units, but actual industry volume was 256,000 units.

1. What is the contribution margin for the flexible budget?
 A). \$1,200,000; B). \$4,200,000; C). \$5,200,000; D). \$5,400,000;
 E). none of the above
2. What is the total sales-mix variance in terms of the contribution margin?
 A). \$200 unfavorable; B). \$360 unfavorable; C). \$900 favorable; D). \$1,260 favorable; E). none of the above

3. The Barnett Company has assembled the following data pertaining to certain costs that cannot be easily identified as either fixed or variable. Barnett Company has heard about a method of measuring cost functions called the high-low method and has decided to use it in this situation.

<u>Cost</u>	<u>Hours</u>
\$24,900	5,250
24,000	5,500
36,400	7,500
44,160	9,750
45,000	9,500

(背面仍有題目,請繼續作答)

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What is the estimated total cost at an operating level of 8,000 hours?

- A). \$43,740; B). \$36,670; C). \$46,875; D). \$37,125; E). none of the above

4. Smith Company had net operating income of \$125,000 using variable costing and \$105,000 using absorption costing. Variable production costs were \$20 per unit. Total fixed manufacturing overhead was \$176,000 and 11,000 units were produced. During the year, the inventory level:

- A). increased by 1,000 units; B). increased by 1,250 units; C). decreased by 1,000 units; D). decreased by 1,250 units; E). none of the above

5. On November 1, Riser Company had 5,000 units of work in process in Department No. 1 that were 100% complete with respect to material costs and 20% complete with respect to conversion costs. During November, 32,000 units were started in Department No. 1 and 34,000 units were completed and transferred to Department No. 2. The work in process on November 30, was 100% complete with respect to material costs and 40% complete with respect to conversion costs. By what amount would the equivalent units for conversion costs for the month of November differ if the FIFO method were used instead of the weighted-average method?

- A). 1,000 decrease; B). 3,000 decrease; C). 1,500 decrease; D). 2,200 decrease; E). none of the above.

6. Eagle Company's quality cost report is to be based on the following data:

Quality data gathering, analysis, and reporting ...	\$59,000
Test and inspection of incoming materials	\$48,000
Final product testing and inspection	\$27,000
Depreciation of test equipment	\$30,000
Cost of field servicing and handling complaints ...	\$52,000
Disposal of defective products	\$13,000
Downtime caused by quality problems	\$52,000
Technical support provided to suppliers	\$18,000
Returns arising from quality problems	\$39,000

What would be the total prevention cost appearing on the quality cost report?

- A). \$57,000; B). \$77,000; C). \$48,000; D). \$86,000; E). none of the above.

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- Use the following to answer questions 7-8:

The Geurtz Company uses standard costing. The company makes and sells a single product called a Roff. The following data are for the month of August:

- (1) Actual cost of direct material purchased and used: \$65,560
- (2) Material price variance: \$5,960 unfavorable
- (3) Total materials variance: \$22,360 unfavorable
- (4) Standard cost per pound of material: \$4
- (5) Standard cost per direct labor hour: \$5
- (6) Actual direct labor hours: 6,500 hours
- (7) Labor efficiency variance: \$3,500 favorable
- (8) Standard number of direct labor hours per unit of Roff: 2 hours
- (9) Total labor variance: \$400 unfavorable

7. The total number of units of Roff produced during August was:

- A). 10,800; B). 14,400; C). 3,600; D). 6,500; E). none of the above.

8. The actual direct labor rate per hour was:

- A). \$ 5.60; B). \$ 5.00; C). \$10.00; D). \$ 4.40; E). none of the above.

- Use the following to answer questions 9-10:

Astoria Computer Systems, Inc., manufactures printers. All direct materials are added at the inception of the production process. During January, the accounting department noted that there was no beginning inventory. Direct materials purchases totaled \$100,000 during the month. Work-in-process records revealed that 4,000 cards were started in January, 2,000 cards were complete, and 1,500 units were spoiled as expected. Ending work-in-process units are complete in respect to direct materials costs. Spoilage is not detected until the process is complete.

9. What are the respective direct material costs per equivalent unit, assuming spoiled units are recognized or ignored?

- A). \$20.00; \$35.00; B). \$25.00; \$40.00; C). \$30.00; \$45.00; D). \$35.00; \$50.00; E). none of the above.

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10. What are the amounts allocated to the work-in-process ending inventory assuming spoilage units are recognized and ignored, respectively?
 A). \$20,000; \$24,500; B). \$30,000; \$34,250; C). \$12,500; \$20,000; D). \$37,500; \$40,000; E). none of the above.

II. (20%)

The Wellesley Corporation makes printed cloth in two departments: Weaving and Printing. Direct materials costs are Wellesley's only variable costs. The demand for Wellesley's cloth is very strong. Wellesley can sell whatever output quantities it produces at \$1,250 per roll to a distributor who markets, distributes, and provides customer service for the product. Wellesley provides the following information.

	Weaving	Printing
Monthly capacity	10,000 rolls	15,000 rolls
Monthly production	9,500 rolls	8,550 rolls
Direct materials costs per roll of cloth processed at each operation	\$500	\$100
Fixed operating costs	\$2,850,000	\$427,500
Fixed operating costs per roll (\$2,850,000 ÷ 9,500 rolls; \$427,500 ÷ 8,550 rolls)	\$300 per roll	\$50 per roll

Wellesley can start only 10,000 rolls of cloth in the Weaving Department because of capacity constraints of the weaving machines. If the Weaving Department produces defective cloth, the cloth must be scrapped and yields zero net disposal value. Of the 10,000 rolls of cloth started in the Weaving Department, 500 (5%) defective rolls are produced. The cost of a defective roll, based on total (fixed and variable) manufacturing cost per roll incurred up to the end of the weaving operation, equal \$785 per roll as follows:

Direct materials costs per roll (variable)	\$500
Fixed operating costs per roll (\$2,850,000 ÷ 10,000 rolls)	285
Total manufacturing costs per roll in Weaving Department	<u>\$785</u>

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The good rolls from the Weaving Department (called gray cloth) are sent to the Printing Department. Of the 9,500 good rolls started at the printing operation, 950 (10%) defective rolls are produced and scrapped at zero net disposal value. The cost of a defective roll based on total (fixed and variable) manufacturing cost per unit incurred up to the end of the printing operation, equals \$930 per roll, calculated as follows:

Total manufacturing cost per roll in Weaving Department	\$785
Printing Department manufacturing cost per roll	
Direct materials cost per roll (variable)	\$100
Fixed operating cost per roll ($\$427,500 \div 9,500$ rolls)	<u>45</u>
Total manufacturing costs per roll in Printing Department	<u>145</u>
Total manufacturing cost per roll	<u>\$930</u>

The Wellesley Corporation's total monthly sales of printed cloth equal the Printing Department's output.

Required

Each requirement refers only to the preceding data. There is no connection between the requirements.

- The Printing Department is considering buying 5,000 additional rolls of gray cloth from an outside supplier at \$900 per roll. The Printing Department manager is concerned that the cost of purchasing the gray cloth is much higher than Wellesley's cost of manufacturing it. The quality of the gray cloth acquired from the outside supplier is very similar to that manufactured in-house. The Printing Department expects that 10% of the rolls obtained from the outside supplier will result in defective products. Should the Printing Department buy the gray cloth from the outside supplier? Show your calculations.
- Wellesley's engineers have developed a method that would lower the Printing Department's rate of defective products to 6% at the printing operation. Implementing the new method would cost \$350,000 per month. Should Wellesley implement the change? Show your calculations.

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ABC Boat Company is interested in replacing a molding machine with a new improved model. The old machine has a salvage value of \$20,000 now and a predicted salvage value of \$4,000 in six years, if rebuilt. If the old machine is kept, it must be rebuilt in one year at a predicted cost of \$40,000.

The new machine costs \$160,000 and has a predicted salvage value of \$24,000 at the end of six years. If purchased, the new machine will allow cash savings of \$40,000 for each of the first three years, and \$20,000 for each year of its remaining six-year life.

Required:

What is the net present value of purchasing the new machine if the company has a required rate of return of 14%? Show your calculations.

IV. (20%)

The Pediatric Department at Wymont General Hospital has a capacity of 90 beds and operates 24 hours a day every day. The measure of activity in the department is patient-days, where one patient-day represents one patient occupying a bed for one day. The average revenue per patient-day is \$130 and the average variable cost per patient-day is \$50. The fixed cost of the department (not including personnel costs) is \$454,000.

The only personnel directly employed by the Pediatric Department are aides, nurses, and supervising nurses. The hospital has minimum staffing requirements for the department based on total annual patient-days in Pediatrics. Hospital requirements, beginning at the minimum expected level of activity, follow:

Annual Patient-Days	Aides	Nurses	Supervising Nurses
10,000–14,000	21	11	4
14,001–17,000	22	12	4
17,001–23,725	22	13	4
23,726–25,550	25	14	5
25,551–27,375	26	14	5
27,376–29,200	29	16	6

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These staffing levels represent full-time equivalents, and it should be assumed that the Pediatric Department always employs only the minimum number of required full-time equivalent personnel.

Average annual salaries for each class of employee are: aides, \$18,000; nurses, \$26,000; and supervising nurses, \$36,000.

Required:

Determine the minimum number of patient-days required for the Pediatric Department to earn an annual "profit" of \$200,000. Show your calculations.

V. (20%)

Come-Clean Corporation produces a variety of cleaning compounds and solutions for both industrial and household use. While most of its products are processed independently, a few are related, such as the company's Grit 337 and its Sparkle silver polish.

Grit 337 is a coarse cleaning powder with many industrial uses. It costs \$1.60 a pound to make, and it has a selling price of \$2.00 a pound. A small portion of the annual production of Grit 337 is retained in the factory for further processing. It is combined with several other ingredients to form a paste that is marketed as Sparkle silver polish. The silver polish sells for \$4.00 per jar.

This further processing requires one-fourth pound of Grit 337 per jar of silver polish. The additional direct costs involved in the processing of a jar of silver polish are:

Other ingredients.....	\$0.65
Direct labor.....	1.48
Total direct cost.....	<u>\$2.13</u>

Overhead costs associated with the processing of the silver polish are:

Variable manufacturing overhead cost..... 25% of direct labor cost

Fixed manufacturing overhead cost (per month):

Production supervisor.....	\$3,000
Depreciation of mixing equipment.....	\$1,400

(背面仍有題目,請繼續作答)

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The production supervisor has no duties other than to oversee production of the silver polish. The mixing equipment is special-purpose equipment acquired specifically to produce the silver polish. Its resale value is negligible and it does not wear out through use.

Direct labor is a variable cost at Come-Clean Corporation.

Advertising costs for the silver polish total \$4,000 per month. Variable selling costs associated with the silver polish are 7.5% of sales.

Due to a recent decline in the demand for silver polish, the company is wondering whether its continued production is advisable. The sales manager feels that it would be more profitable to sell all of the Grit 337 as a cleaning powder.

Required:

What is the minimum number of jars of silver polish that must be sold each month to justify the continued processing of Grit 337 into silver polish? Explain. Show all computations in good form.