

東吳大學 110 學年度碩士班研究生招生考試試題

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系級	會計學系碩士班	考試時間	100 分鐘
科目	成本及管理會計學	本科總分	100 分

※一律作答於答案卷上(題上作答不予計分)；並務必標明題號，依序作答。

Problem One

The SCU makes a range of products. The company's predetermined overhead rate is \$14 per direct labor-hour, which was calculated using the following budgeted data:

Variable manufacturing overhead	\$105,000
Fixed manufacturing overhead	\$385,000
Direct labor-hours	35,000

Management is considering a special order for 300 units of product D03C at \$119 each. The normal selling price of product D03C is \$157 and the unit product cost is determined as follows:

Direct materials	\$64.0
Direct labor	\$37.5
Manufacturing overhead applied	\$35.0

If the special order were accepted, normal sales of this and other products would not be affected. The company has ample excess capacity to produce the additional units. Assume that direct labor is a variable cost, variable manufacturing overhead is really driven by direct labor-hours, and total fixed manufacturing overhead would not be affected by the special order.

Required : (9%)

If the special order were accepted, what would be the impact on the company's overall profit?

Problem Two

The SCU makes candy bars for vending machines and sells them to vendors in cases of 30 bars. Although SCU makes a variety of candy, the cost differences are insignificant, and the cases all sell for the same price. SCU has a total capital investment of \$15,000,000. It expects to produce and sell 300,000 cases of candy in 2021. SCU requires a 10% target return on investment.

(1) Use the high-low method to compute the cost function relating production costs to the number of cases.

Production costs for the most recent 8-year period are as follows:

Year	Production costs	Number of cases
1	\$ 720,000	121,000
2	1,280,000	285,000
3	780,000	120,000
4	1,900,000	360,000
5	880,000	135,000
6	2,060,000	440,000
7	2,010,000	440,000
8	2,160,000	420,000

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(2) Expected marketing and distribution costs for 2021 are as follows:

Variable marketing and distribution costs \$1.00 per case

Fixed marketing and distribution costs \$600,000

SCU prices the cases of candy at full cost plus markup to generate profits equal to the target return on capital.

Required : (24%)

1. What is the selling price SCU needs to charge to earn the target operating income? (2%) Calculate the markup percentage on full cost.(2%)
2. IF the SCU expects to produce 400,000 cases and sell 300,000 cases of candy in 2021. Same price as requirement 1. What is breakeven point in units under absorption costing?(4%)
3. Compute the operating leverage factor for 2021. (4%)
4. Calculate the margin of safety percentage for 2021. (4%)
5. SCU's closest competitor has just increased its candy case price to \$16, although it sells 36 candy bars per case. SCU is considering increasing its selling price to \$15 per case. Assuming production and sales decrease by 4%, calculate SCU' return on investment. Is increasing the selling price a good idea? (4%)
6. Actual variable manufacturing costs in 2021 were \$1,300,000 for 320,000 cases started and completed. Actual fixed manufacturing overhead costs in 2021 were \$330,000. Compute the flexible-budget variance and production-volume variance. (4%)

Problem Three

The SCU uses a flexible budget and standard costs to aid planning and control of its machining manufacturing operations. Its costing system for manufacturing has two direct-cost categories (direct materials and direct manufacturing labor—both variable) and two overhead-cost categories (variable manufacturing overhead and fixed manufacturing overhead, both allocated using direct manufacturing labor-hours). At the 50,000 budgeted direct manufacturing labor-hour level for August, budgeted direct manufacturing labor is \$1,250,000, budgeted variable manufacturing overhead is \$500,000, and budgeted fixed manufacturing overhead is \$1,000,000. The following actual results are for August:

Direct materials price variance (based on purchases)	\$179,300 F
Direct materials efficiency variance	75,900 U
Direct manufacturing labor costs incurred	535,500
Variable manufacturing overhead flexible-budget variance	10,400 U
Variable manufacturing overhead efficiency variance	18,100 U
Fixed manufacturing overhead incurred	957,550

The standard cost per pound of direct materials is \$11.50. The standard allowance is 6 pounds of direct materials for each unit of product. During August, 20,000 units of product were produced. There was no

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beginning inventory of direct materials. There was no beginning or ending work in process. In August, the direct materials price variance was \$1.10 per pound. In July, labor unrest caused a major slowdown in the pace of production, resulting in an unfavorable direct manufacturing labor efficiency variance of \$40,000. There was no direct manufacturing labor price variance. Labor unrest persisted into August. Some workers quit. Their replacements had to be hired at higher wage rates, which had to be extended to all workers. The actual average wage rate in August exceeded the standard average wage rate by \$0.50 per hour.

Required : (18%)

Compute the following for August:

1. Total pounds of direct materials purchased
2. Total number of pounds of excess direct materials used
3. Variable manufacturing overhead spending variance
4. Total number of actual direct manufacturing labor-hours used
5. Total number of standard direct manufacturing labor-hours allowed for the units produced
6. Production-volume variance

Problem Four

The SCU produces basic bed sheets and luxury bed sheets. The luxurious bed sheets use combed cotton and the basic bed sheets use general cotton. Each batch of combed cotton costs \$100,000. The cost of each batch of general cotton is half of the cost of combed cotton. Each batch of general cotton can produce 500 basic bed sheets. However, a batch of combed cotton can produce 200 luxury sheets. Both types of bed sheets have four production steps, which are dyeing, cutting, seam and finishing. The special type needs to go through an embroidery after the seam. The labor cost of embroidery is \$2,000 per hour. 50 sheets can be embroidered per hour. The cost of embroidery material is \$10,000 per batch. Except for embroidery, each production step puts the same resources on these two types of products. The materials for each production step are input at the beginning of each step, but only the materials for the finishing step are input at the end. SCU uses operation costing to record the cost of the two products. The number of units produced this month is 2,000 luxury type and 6,000 basic type. The cost of each production step in the current month is as follows:

	Dyeing	Cutting	Seam	Finishing
Direct material (excluding cotton material)	\$240,000	\$ 144,000	\$200,000	\$84,000
Conversion cost	\$ 120,000	\$320,000	\$160,000	\$142,400

Required : (21%)

1. Please calculate the total costs of each batch of each type of product this month (without spoiled units).
(6%)

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2. Assuming that in the finishing department, the bed sheets are inspected at 90% of the completion, and the materials are put in after the inspection. Normal spoilage is 10% of all good units that pass inspection. The finishing department has no beginning inventory this month, and the production ratio of luxury bed sheets to basic bed sheets is 1:3. A total of 1,600 sheets were in ending work in process (50% completed). A total of 8,000 sheets were transferred-in, and 5,600 sheets were manufactured and transferred out. For current month, according to luxury bed sheets summarize total costs to account for and assign these costs to units completed and transferred out (including normal spoilage), to abnormal spoilage, and to units in ending work in process. (Based on original cost data.) (15%)

Problem Five

The SCU uses 10 units of part JR63 each month in the production of radar equipment. The cost of manufacturing one unit of JR63 is the following:

Direct material	\$1,000
Material handling (20% of direct-material cost)	200
Direct labor	8,000
Manufacturing overhead (150% of direct labor)	12,000
Total manufacturing cost	\$21,200

Material handling represents the direct variable costs of the Receiving Department that are applied to direct materials and purchased components on the basis of their cost. This is a separate charge in addition to manufacturing overhead. The SCU' annual manufacturing overhead budget is one-third variable and two-thirds fixed. Scott Supply, one of SCU' reliable vendors, has offered to supply part number JR63 at a unit price of \$15,000.

Required : (18%)

1. If SCU purchases the JR63 units from Scott, the capacity SCU used to manufacture these parts would be idle. Should SCU decide to purchase the parts from Scott, the unit cost of JR63 would increase (or decrease) by what amount?
2. Assume SCU is able to rent out all its idle capacity for \$25,000 per month. If SCU decides to purchase the 10 units from Scott Supply, Chenango's monthly cost for JR63 would increase (or decrease) by what amount?
3. Assume that SCU does not wish to commit to a rental agreement but could use its idle capacity to manufacture another product that would contribute \$52,000 per month. If SCU's management elects to manufacture JR63 in order to maintain quality control, what is the net amount of SCU's cost from using the space to manufacture part JR63?

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Problem Six

The SCU manufactures protective eyewear for use in commercial and home applications. The product is also used by hunters, home woodworking hobbyists, and in other applications. The firm has two main product lines the highest quality product is called Safe-T, and a low-cost, value version is called Safe-V. Information on the factory conversion costs for SCU is as follows:

Factory Costs	
Salaries	\$850,000
Supplies	150,000
Factory expense	550,000
	\$1,550,000

The SCU uses ABC costing to determine the unit costs of its products. The firm uses resource consumption cost drivers based on rough estimates of the amount that each activity consumes, as shown below. The SCU has four activities: setup, assembly, inspecting and finishing, and packaging.

	Setup	Assembly	Inspecting & Finishing	Packaging
Salaries	15%	55%	20%	10%
Supplies	20%	60%	20%	
Factory expense		80%	20%	

The activity cost drivers for the two products are summarized below.

Activities	Activity Driver
Setup	Batch
Assembly	Units
Inspect and finishing	Hours
Packaging	Hours

	Safe-V	Safe-T
Batches	250	600
Units	60,000	72,000
Finishing hours, per unit	0.2	0.3
Packaging hours, per unit	0.1	0.15
Materials per unit	\$3.5	\$6

Required : (10%)

Determine the activity-based unit cost for each of the products.