

國立成功大學  
110學年度碩士班招生考試試題

編 號：231

系 所：會計學系

科 目：成本與管理會計學

日 期：0203

節 次：第 3 節

備 註：可使用計算機

※ 考生請注意：本試題可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

一、選擇題 (45%，每一題3%)

1. NCKU Corp. used budgeted labor hours to allocate variable manufacturing overhead. The following information relates to the company's manufacturing overheads:

Budgeted output units	45,500 units
Budgeted labor-hours	27,300 hours
Budgeted variable manufacturing overhead costs for 45,500 units	\$546,000

Actual output units produced	47,500 units
Actual labor-hours used	14,500 hours
Actual variable manufacturing overhead costs	\$605,000

What is the flexible-budget variance for variable manufacturing overhead?

- A) \$35,000 unfavorable  
 B) \$59,000 unfavorable  
 C) \$25,000 unfavorable  
 D) \$24,000 unfavorable
2. Which of the following statements is *TRUE*?
- A) The sales-quantity variance occurs in a multi-product company from a change in the sales mix.  
 B) A favorable variance should be ignored by management.  
 C) A favorable flexible-budget variance for variable costs may be the result of using more input quantities than were budgeted.  
 D) The difference between flexible budget costs and allocated overhead costs will give the production volume variance.
3. Which of the following statements is *FALSE*?
- A) The degree of operating leverage at a specific level of sales helps the managers calculate the effect that potential changes in sales will have on operating income.  
 B) The margin of safety refers to how many more sales are needed in order to breakeven.  
 C) If a company's breakeven revenue is \$1,000 and its budgeted revenue is \$1,600, then its margin of safety percentage is 37.5%.  
 D) A company with a higher degree of operating leverage is at greater risk during economic downturns because of its higher fixed costs.

4. Which of the following is *TRUE*?
- A) Job-costing and process-costing are mutually exclusive and cannot be used together.
  - B) Uniformly assigning the costs of resources to cost objects when those resources are actually used in a nonuniform way is called activity-based costing.
  - C) Product-cost cross-subsidization is common when costs are uniformly spread across various products
  - D) When manufacturing overhead is allocated to jobs, the Manufacturing Overhead Allocated account is debited.

5. Sweet Inc. makes lollipops and uses a process costing system. The following information pertains to the final department of Sweet's lollipops:

Beginning work-in-process (40% completed)	800 units
Transferred-in	4,000 units
Normal spoilage	400 units
Good units transferred out	3,800 units
Ending work-in-process (30% completed)	600 units
Conversion costs in beginning inventory	\$ 2,560
Current conversion costs	\$ 6,900

The spoilage of the lollipops is identified as normal spoilage and normal spoilage costs are reallocated to good units. The units of lollipops that are spoiled are the result of defects not discovered before inspection of finished units. Materials are added at the beginning of the process. Using the *weighted-average method*, what are the equivalent units for conversion costs?

- A) 4,200 units.
  - B) 4,800 units.
  - C) 3,600 units.
  - D) 4,380 units.
6. Which of the following perspectives of a Balanced Scorecard would most likely be the ultimate goal in a strategy map for a public company?
- A) Learning and innovation.
  - B) Internal processes.
  - C) Financial performance.
  - D) Customer service.

7. Shining Inc., produces Christmas bulbs. Management has provided the following information:

Actual sales	40,000 bulbs
Budgeted production	55,000 bulbs
Selling price	\$35 per bulbs
Direct material costs	\$9.15 per bulb
Variable manufacturing costs	\$3.25 per bulb
Variable administrative costs	\$4.75 per bulb
Fixed manufacturing overhead	\$4.80 per bulb

What is the total throughput contribution?

- A) \$714,000
  - B) \$904,000
  - C) \$1,034,000
  - D) \$1,421,750
8. The optimal safety stock level is the quantity of safety stock that minimizes the sum of the annual relevant \_\_\_\_\_.
- A) stockout costs and carrying costs
  - B) ordering costs and carrying costs
  - C) ordering costs and stockout costs
  - D) ordering costs and purchasing costs
9. The manager of ACC wanted to calculate the manufacturing cycle efficiency and obtained the following information. He found that the waiting time is 70 minutes before the start of production and the manufacturing lead time is 175 minutes per laptop. What is its manufacturing cycle efficiency?
- A) 40%
  - B) 64%
  - C) 60%
  - D) 71%
10. A company should use cost-based transfer prices \_\_\_\_\_.
- A) when a company's product is specialized
  - B) the market for the intermediate product is perfectly competitive
  - C) the interdependencies of subunits are minimal
  - D) there is no benefit from market-based transfer price

11. Miracle Manufacturing Company has excess capacity and is approached by Dream Wonderland, an amusement park, to fulfill a large one-time-only special order for a product similar to one offered to regular customers. The following per unit data apply for sales to regular customers:

Direct materials	\$470
Direct manufacturing labor	150
Variable manufacturing overheads	55
Fixed manufacturing overheads	<u>200</u>
Total manufacturing costs	875
Markup (20% of total manufacturing costs)	<u>175</u>
Estimated selling price	<u>\$1,050</u>

If the Dream Wonderland wanted a long-term commitment, but not a one-time-special order, for supplying this product, calculate the most likely price to be quoted assuming the markup remains the same?

- A) \$675  
 B) \$875  
 C) \$470  
 D) \$1,050
12. Universe Company has long-term debt with a market and book value of \$15,000,000 issued at an interest rate of 9%, and equity capital that has a market value of \$3,000,000 (book value of \$3,600,000). Universe Company has profit centers in the following locations with the following operating incomes, total assets, and current liabilities. The cost of equity capital is 12%, while the tax rate is 40%.

	Operating Income	Assets	Current Liabilities
Saturn	\$1,500,000	\$4,000,000	\$830,000
Mercury	\$918,000	\$5,000,000	\$1,230,000
Jupiter	\$2,450,000	\$9,000,000	\$3,180,000

What is the EVA<sup>®</sup> for Saturn? (Round intermediary calculations to three decimal places.)

- A) \$598,850  
 B) \$693,950  
 C) \$1,293,950  
 D) \$1,113,950

13. Which of the following statements relate to the cost function is *TRUE*?
- A) In using high-low method, the slope coefficient is calculated by dividing the difference between highest and lowest observations of the cost driver by the difference between costs associated with highest and lowest observations of the cost driver.
  - B) The advantages of the high-low method to estimate a cost function is that it is accurate and simple.
  - C) Activity-based costing systems use the quantitative analysis method exclusively for cost estimation because of its accuracy.
  - D) When estimating the cost function for each cost pool, the manager must pay careful attention to the cost hierarchy because the cost pool may have more than one cost driver from different levels of the cost hierarchy.

14. The following information is related to NCKU Company's production of January, 2021.

Cost of Goods Sold	\$ 65,000
Work-in-Process Inventory, 2021/1/1	10,500
Work-in-Process Inventory, 2021/1/31	9,000
Selling and Administrative Expense	15,000
Finished Goods Inventory, 2021/1/31	15,000
Finished Goods Inventory, 2021/1/1	?
Direct Materials Used	?
Manufacturing Overhead Costs	12,000
Operating Income	14,000
Direct Materials Inventory, 2021/1/1	11,000
Direct Materials Inventory, 2021/1/31	6,000
Cost of Goods Manufactured	60,000

If the direct labor cost incurred during the period amounted to 1.5 times the manufacturing overhead.

What is the amount of direct materials purchased during January, 2021?

- A) \$23,500.
- B) \$28,500.
- C) \$31,000.
- D) \$36,000.

15. The following are statements related to budgets and which of them is *TRUE*?
- A) Capital budgeting is the process of making short-run planning decisions for investments in projects.
  - B) Budgeting for production is simply an extension of the sales forecast and is prepared after the materials purchases budget is prepared.
  - C) A budgeting process can facilitate learning in that feedback from budgets can lead to changes in plans and strategies
  - D) The cash budget is a schedule of expected cash receipts and disbursements and should not include the financing plans.

二、計算題 (45%)

1. (15%) NCKU Bio-Medicine Co. manufactures vaccines in its ACC plant. Each vaccine passes through the producing department and the testing department. NCKU Bio-Medicine uses the *FIFO method of process costing*. During January, 2021, the beginning work-in-process in the Producing Department was 60% completed as to conversion cost and complete as to direct materials. The beginning inventory included \$40,000 for materials and \$60,000 for conversion costs. Ending work-in-process inventory in the producing department was 40% complete. Direct materials are added at the beginning of the process. When the producing department finishes work on each vaccine, it is immediately transferred to testing department. Beginning work in process in the Testing Department was 80% complete as to conversion cost. Direct materials for testing the units are added when the testing department process is 90% complete. Beginning inventories included \$24,000 for transferred-in costs and \$28,000 for conversion costs. Ending inventory was 30% complete. As each unit is completed in testing, it is immediately transferred to Finished Goods. Additional data for the producing department and testing department for January 2021 are as follows:

	Producing	Testing
Beginning work-in-process units	20,000	24,000
Units started this period	60,000	
Units transferred this period	64,000	68,000
Ending work-in-process units		20,000
Material costs added	\$56,000	\$102,000
Conversion costs	25,000	68,500
Transferred-out cost	128,000	

**Required:**

Prepare a production cost worksheet for the Testing Department.

2. (15%) Life Intelligence Company produces a variety of artificial intelligence products. One of its plants produces two products, LX01 and HX01. The following is the information of this plant at the beginning of 2021:

	LX01	HX01
Quantity	50,000	400,000
Selling price	\$580	\$360
Unit prime cost	180	110
Unit overhead cost	20	155

The unit overhead cost is calculated using the predetermined overhead application rate based on direct labor-hours. Based on the capacity constraint of the plant and the information of LX01 and HX01, the plant supervisor discussed the product-mix producing and selling for the 2021 with all the department managers. The marketing manager suggested to place more emphasis on producing and selling the LX01. However, the production manager argued that the manufacturing process of LX01 is much more complex than HX01 because LX01 is more sophisticated, and might result in a much higher cost than reported. The accounting manager suggests an activity-based costing system and provides the following budget data pertaining to the period:

Activity	Activity Cost Driver	Cost per Unit of Cost Driver
Setups	Number of setups	\$3,500
Machining	Machine-hours	100
Engineering	Engineering-hours	40
Testing	Number of Testing	30

The activity consumptions of LX01 and HX01 are shown as follows:

Activity	Activity Consumption	
	LX01	HX01
Setups	250 units per setup	8,000 units per setup
Machine costs	3 Machine-hours per unit	1.5 Machine-hours per unit
Engineering	0.8 Engineering-hours per unit	0.3 Engineering-hours per unit
Testing	1 unit per testing	2 units per testing

**Required:**

- Using the projected data based on the firm's current costing system, calculate gross profit per unit for LX01 and HX01. (2%)
- Using the suggested multiple cost drivers' overhead rates, calculate the overhead cost per unit for each product and determine gross profit per unit for LX01 and HX01. (8%) (Round calculations to 2 decimal places.)
- If you are the plant supervisory, how will you make the product? Explain in as much as detail as you can. (5%)



3. (15%) MagicCosmetic Shop is planning to place a NT\$250,000 machine to test customers' skin, helping customers to purchase adequate products based on their skin condition. The MagicCosmetic's sales manager predict that the machine will increase the annual sales revenue (before taxes) by an estimated \$80,000 for each of the next five years. The shop's required rate of return is 8%. The machine will be depreciated using straight-line method over a five-year period with no salvage value. The income tax rate of the MagicCosmetic Shop is 40%.

**Required:**

- a. What is the estimated net present value of the proposed investment? Please show all your calculations and use 3 decimal places (e.g., 0.999) for the discount factor calculation. (6%)
- b. What is the estimated internal rate of return of the proposed investment? (6%)
- c. Determine the payback period of the investment by using the discounted payback method, assuming that cash inflows occur evenly throughout the year. Please show all your calculations and use 3 decimal places (e.g., 0.999) for the discount factor calculation. (3%)

**三、問答題 (10%)**

A Make-or-Buy decision is about whether a producer of goods or services will insource or outsource. A company is currently considering outsourcing some key components related to their final products. More specifically, the company wants to decide whether to manufacture those key components in-house as it has done in the past few years, or to purchase from external suppliers. If you were the CEO of the company, what relevant information would you take into consideration? Please show your point of view and elaborate. (You can answer in Chinese or English.)