

# 國立成功大學

## 114學年度碩士班招生考試試題

編 號：161

系 所：會計學系

科 目：成本與管理會計學

日 期：0211

節 次：第 3 節

注 意：1. 可使用計算機  
2. 請於答案卷(卡)作答，於  
試題上作答，不予計分。

一、選擇題(30%，一題 3%)

1. NCKU Inc. manufactures ACC-01 and applies manufacturing overhead costs to production at a budgeted indirect-cost rate of \$18 per direct labor-hour. The following data are obtained from the accounting records for February 2025:

Direct materials	\$100,000
Direct labor (4,900 hours @ \$12/hour)	58,800
Indirect labor	10,000
Plant facility rent	26,000
Depreciation on plant machinery and equipment	37,600
Sales commissions	20,000
Administrative expenses	39,000

For February 2025, manufacturing overhead is:

- A) overallocated by \$14,600  
 B) underallocated by \$44,400  
 C) overallocated by \$52,200  
 D) underallocated by \$14,600
2. Following a strategy of product differentiation, ACC's Limited Company makes a high-end Appliance, XT15. ACC's Limited presents the following data for the years 2024 and 2025:

	<u>2024</u>	<u>2025</u>
Units of XT15 produced and sold	54,000	56,200
Selling price	\$400	\$470
Direct materials (square feet)	154,000	157,750
Direct material costs per square foot	\$51	\$59
Manufacturing capacity in units of XT15	63,500	63,500
Total conversion costs	\$866,250	\$836,850
Conversion costs per unit of capacity	\$102	\$108
Selling and customer-service capacity (customers)	150	150
Total selling and customer-service costs	\$2,295,000	\$2,388,750
Selling and customer-service capacity cost per customer	\$15,300	\$15,925

ACC's Limited produces no defective units but it wants to reduce direct materials usage per unit of XT15. Manufacturing conversion costs in each year depend on production capacity defined in terms of XT15 units that can be produced. Selling and customer-service costs depend on the number of customers that the customer and service functions are designed to support. ACC's Limited had 160 customers in 2024 and 165 customers in 2025.

What is the net effect on operating income as a result of the price-recovery component? (Round any intermediary calculations to two decimals and your final answer to the nearest dollar.)

- A) \$5,690,943 F  
 B) \$5,690,943 U  
 C) \$2,177,057 F  
 D) \$2,177,057 U

3. Bouchard Company manufactures a product that currently has a full cost of \$715. Its target operating income per unit is \$65, and management's budgets assume that same target operating income per unit for the foreseeable future. Bouchard management believes it must cut its price by 15% to stay competitive. What will be its new target price?
- A) \$607.75
  - B) \$663
  - C) \$672.75
  - D) \$715

4. NCKU Company has two divisions, X and Y, each operated as an investment center. Division X produces and sells XP01 to Division Y and outsiders. Division X charges Division Y \$57 per unit for each unit transferred to Y. Other data are:

X's variable cost per unit	\$45	
X's fixed costs	\$150,000	
X's annual sales to Y	5,000	units
X's sales to outsiders	10,000	units

Division X is planning to raise its transfer price to \$67 per unit. Division Y can purchase units at \$53 each from outsiders, but doing so would idle X's facilities, which are now committed to producing units for Y. Division X cannot increase its sales to outsiders. From the perspective of the short-term profit position of the company as a whole, from which source should Division Y acquire the units?

- A) Outside vendors
  - B) Division X, but only at the variable cost per unit.
  - C) Division X, but only until fixed costs are covered, then should purchase from outside vendors.
  - D) Division X, in spite of the increased transfer price.
5. Miracle Jewelry sells 500 units resulting in \$75,000 of sales revenue, \$31,000 of variable costs, and \$26,000 of fixed costs. The number of units that must be sold to achieve \$45,000 of operating income is: (Round intermediary calculations to two decimal places, and your final answer up to the nearest whole number.)
- A) 296 units
  - B) 512 units
  - C) 807 units
  - D) 1,973 units
6. HighLand Co. is a distributor of golf balls. Happy Golf Supplies is a local retail outlet which sells golf balls. Happy's purchases the golf balls from HighLand Co. at \$0.95 per ball; the golf balls are shipped in cartons of 42. HighLand Co. pays all incoming freight, and Happy's Golf Supplies does not inspect the balls due to HighLand's reputation for high quality. Annual demand is 156,520 golf balls at a rate of 3,010 balls per week. Happy Golf Supplies earns 12% on its cash investments. The purchase-order lead time is one week. The following cost data are available:
- Relevant ordering costs per purchase order \$135.00
- Carrying costs per carton per year:
- Relevant insurance, materials handling, breakage, etc., per year \$0.97
- Purchasing at the EOQ recommended level, how many deliveries will be made during each time period? (Round costs to the nearest cent and quantities to the nearest whole number.)
- A) 2 deliveries
  - B) 7.4 deliveries
  - C) 8.9 deliveries
  - D) 12.6 deliveries

7. Which of the following statements is **TRUE**?
- A) Companies that implement JIT purchasing will emphasize developing short-term supplier relationships with many suppliers to attain flexibility.
  - B) Just-in-time purchasing describes the flow of goods, services, and information from the initial sources of materials and services to the delivery of products to consumers, regardless of whether those activities occur in the same organization or in other organizations.
  - C) Just-in-time systems are similar to materials requirement planning systems as both systems are demand-pull systems.
  - D) In JIT purchasing, raw materials (or goods) are purchased so that products are delivered just as needed for production or sales.

8. XYZ Company has two sources of funds: long-term debt with a market and book value of \$5,300,000 issued at an interest rate of 10%, and equity capital that has a market value of \$4,000,000 (book value of \$2,200,000). XYZ 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 35%.

	Operating Income	Assets	Current Liabilities
Tainan	\$480,000	\$2,100,000	\$130,000
Kaohsiung	\$750,000	\$4,710,000	\$300,000
Taipei	\$1,234,000	\$6,230,000	\$650,000

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

- A) \$98,058
  - B) \$137,261
  - C) \$152,233
  - D) \$305,261
9. NCKU Hospital has been considering the purchase of a new minimally invasive surgical machine. The existing machine is operable for five more years and will have a zero disposal price. If the machine is disposed of now, it may be sold for \$150,000. The new machine will cost \$640,000, and an additional cash investment in working capital of \$75,000 will be required. The new machine will reduce the average amount of time required to perform minimally invasive surgery and will allow an additional amount of business to be done at the hospital. The investment is expected to net \$50,000 in additional cash inflows in the first year of use and \$160,000 each additional year of use. The new machine has a five-year life, and zero disposal value. These cash flows will generally occur throughout the year and are recognized at the end of each year. Income taxes are not considered in this problem. The working capital investment will not be recovered at the end of the asset's life.
- What is the investment's net present value, assuming the required rate of return is 18%? Would the hospital want to purchase the new machine?
- A) (\$307,850); no
  - B) (\$157,850); no
  - C) \$157,850; yes
  - D) \$69,920; yes
10. Spring Corp. manufactures laptops. The waiting time is 70 minutes before the start of production, and the manufacturing lead time is 169 minutes per laptop. What is its manufacturing cycle efficiency? (Round to the nearest whole percent.)
- A) 41%
  - B) 71%
  - C) 59%
  - D) 141%

二、計算及申論題(70%)

1. (12%) Sweet Bake manufactures and sells three flavors of cookies: Chocolate, Strawberry, and Buttercream. The batch size for the cookies is limited to 1,000 cookies based on the size of the ovens and cookie molds owned by the company. Based on budgetary projections, the information listed below is available:

	<u>Chocolate</u>	<u>Strawberry</u>	<u>Buttercream</u>
Projected sales in units	500,000	800,000	600,000

**PER UNIT data:**

Selling price	\$0.90	\$0.75	\$0.60
Direct materials	\$0.20	\$0.15	\$0.13
Direct labor	\$0.03	\$0.02	\$0.02

**Hours per 1000-unit batch:**

Direct labor hours	2	1	1.5
Oven hours	1.5	1	1
Packaging hours	0.5	0.5	0.6

Total overhead costs and activity levels for the year are estimated as follows:

<u>Activity</u>	<u>Overhead costs</u>	<u>Activity levels</u>
Direct labor		2,400 hours
Oven	\$210,000	2,000 oven hours
Packaging	\$150,000	1,000 packaging hours
	<u>\$360,000</u>	

**Required:**

- Using a traditional system (with direct labor hours as the overhead allocation base), for each of the three flavors of cookies, compute the estimated operating profit per thousand cookies. (3%)
- Using the ABC system, for each of the three flavors of cookies, compute the estimated operating profit per thousand cookies. (6%)
- In your opinion, which system provides a better estimate of profitability? Why? (3%)

2. (12%) The following information is February overhead expenditures for NCKU Company.

Budgeted output units	3,200 units
Budgeted fixed manufacturing overhead	\$20,000
Budgeted variable manufacturing overhead	\$5 per direct labor hour
Budgeted direct manufacturing labor hours	2 hours per unit
Fixed manufacturing costs incurred	\$25,000
Direct manufacturing labor hours used	7,200
Variable manufacturing costs incurred	\$37,600
Actual units manufactured	3,500

**Required:**

Based on the overhead expenditure information for February, please compute a 4-variance analysis.

- (10%)自 2022 年起至 2024 年，全球的科技業出現裁員潮，知名企業如 Google、Intel、Dell、IBM、Tesla、Meta 等都在進行公司縮編計劃，這些企業多數宣稱此縮編計劃係為了提高企業財務績效、營運效率，請詳述當公司進行部門縮減及人事縮編，可能產生的成本及帶來的效益。

4. (15%) NCKU Company uses a process-costing system. For February, the company had the following activities:

Beginning work-in-process inventory (25% complete)	7,600 units
Units placed in production	28,400 units
Good units completed	21,800 units
Ending work-in-process inventory	12,000 units
Cost of beginning work in process	\$ 6,000
Direct material costs, current	\$21,300
Conversion costs, current	\$14,650

Direct materials are placed into production at the beginning of the process. All spoilage is normal and is detected at the end of the process. Ending WIP is 60% completed as to conversion.

**Required:**

Using the *FIFO method*, compute the cost of goods completed and transferred out and the cost of ending working in process.

5. (9%) Organic Tomato Company processes tomatoes into catsup, tomato juice, and canned tomatoes. During the summer of 2025, the joint costs of processing the tomatoes were \$420,000. There was no beginning or ending inventories for the summer. Production and sales value information for the summer is as follows:

Product	Cases	Sales Value at Split-off Point	Separable Costs	Selling Price
Catsup	100,000	\$6 per case	\$3.00 per case	\$28 per case
Juice	150,000	8 per case	5.00 per case	25 per case
Canned	200,000	5 per case	2.50 per case	8 per case

**Required:**

Determine the amount of joint cost allocated to each product if the *estimated net realizable value method* is used, and compute the cost per case for each product. (若無法整除，請取到小數點後第四位)

6. (12%) NCKU Company has two operating departments, Department A and Department B, and two support departments, Department X and Department Y. The base used to allocate Department X's service is budgeted total maintenance hours. The base used to allocate Department Y's services is the number of credit hours for a department. The budget of Department X is \$350,000, while the budget of Department Y is \$950,000. The following chart summarizes budgeted amounts and allocation-base amounts used by each department:

	Services Provided: (Annually)				
	Budget	Department A	Department B	Department X	Department Y
Department A	\$3,500,000				
Department B	\$1,400,000				
Department X (in hours)	\$350,000	2,000	1,000	Zero	5,000
Department Y (in credit hrs)	\$950,000	24,000	36,000	2,000	Zero

**Required:**

Determine total costs for each department by using the reciprocal method.