國立成功大學

112學年度碩士班招生考試試題

編　號： 224

系　所： 會計學系

科　目： 成本與管理會計學

日　期： 0207

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(一題 3%，共 42%)

1. The Hermes Company processes unprocessed milk to produce two products, Butter Cream and Condensed Milk. The following information was collected for the month of February:

   Direct Materials processed:　26,500 gallons (after shrinkage)

Production:	Butter Cream	13,500	gallons
	Condensed Milk	13,000	gallons
Sales:	Butter Cream	12,000	gallons
	Condensed Milk	10,500	gallons
Sales Price:	Butter Cream	$5.00	per gallon
	Condensed Milk	$8.50	per gallon
Separable costs in total:	Butter Cream	$12,500	
	Condensed Milk	$35,600	

   The cost of purchasing the of unprocessed milk and processing it up to the split-off point to yield a total of 26,500 gallons of saleable product was $52,640. The company uses **constant gross-margin percentage NRV method** to allocate the joint costs of production. What is the allocated joint costs of Butter Cream? (Round intermediary percentages to the nearest hundredth.)

   A) $26,943
   B) $28,000
   C) $33,063
   D) $25,705

2. Universe Inc. is a distributor of DVDs. Polar Mart is a local retail outlet which sells blank and recorded DVDs. Polar Mart purchases DVDs from Universe at $25.00 per DVD; DVDs are shipped in packages of 80. Universe pays all incoming freight, and Polar Mart does not inspect the DVDs due to Universe's reputation for high quality. Annual demand is 320,000 DVDs at a rate of 6,400 DVDs per week. Polar Mart 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　　$120

   Carrying costs per package per year:

   　Relevant insurance, materials handling, breakage, etc., per year　$10

   What are the annual relevant ordering costs per package?

   A) $1,096
   B) $1,549
   C) $7,746
   D) $7,590

3. The actual information pertains to the month of January. As a part of the budgeting process, NCKU Company developed the following static budget for January. NCKU is in the process of preparing the flexible budget and understanding the results.

	Actual Results	**Static Budget**
Sales volume (in units)	17,000	21,000
Sales revenues	$940,000	$1,100,000
Variable costs	391,000	525,000
Contribution margin	549,000	575,000
Fixed costs	275,800	265,000
Operating profit	$273,200	$310,000

The flexible-budget variance for variable costs is: (Round any intermediate calculations to the nearest cent, and round your final answer to the nearest dollar.)
A) $34,000 favorable
B) $134,000 favorable
C) $42,000 favorable
D) $34,000 unfavorable

4. The tradeoff between risk and return across alternative cost structures can be measured as:
A) sensitivity analysis
B) operating leverage
C) break-even point
D) margin of safety

5. Which of the following statement is ***TRUE***?
A) In multiproduct situations, when sales mix shifts toward the product with the lowest contribution margin, the operating income will be lower.
B) If a company's sales mix is 2 units of product A for every 3 units of product B, and the company sells 3,000 units in total of both products, only 2,000 units of product A will be sold.
C) All other factors being equal, for any given total quantity of units sold, the breakeven point increases and operating income increases if the sales mix shifts toward products with higher contribution margins.
D)) If the sales mix shifts toward the lower-contribution-margin product, the breakeven quantity will decrease.

6. NCKU Accounting Inc., employs 17 full-time CPAs and 10 paraprofessionals. Direct and indirect costs are applied on a professional labor-hour basis that includes both CPA and paraprofessional hours. Following is information for 2022:

	Budget	**Actual**
Indirect costs	$280,000	$325,000
Annual salary of each CPA	$154,360	$168,300
Annual salary of each paraprofessional	$ 25,000	$ 26,000
Total professional labor-hours	40,000 dlh	55,000 dlh

When using a normal costing system, year-end accounting records will show that indirect costs are:

A) perfectly allocated

B) underallocated

C) within budget

D) overallocated

7. Which of the following statements is ***TRUE***?

A) If companies increase market share in a given product line because their reported costs are less than their actual costs, they will become more profitable in the long run.

B) As product diversity and indirect costs increase, it is usually best to switch away from a broad averaging system to an activity-based cost system.

C) The risk of product-cost cross-subsidization is high when managers of a company with a multi-product offering, carefully study and accurately estimate the amount of resources each product consumes.

D) Modern manufacturing practices have helped reduce overhead costs relative to direct costs as the reliance on support resources such as scheduling, design, and engineering has diminished.

8. _________ is based on the level of capacity utilization that satisfies average customer demand over periods generally longer than one year.

A) Practical capacity

B) Theoretical capacity

C) Master-budget capacity utilization

D) Normal capacity utilization

9. Hephaestus Corporation has two divisions, Refining and Extraction. The company's primary product is oil. Each division's costs are provided below:

Extraction:	Variable costs per barrel of oil	$17
	Fixed costs per barrel of oil	$12
Refining:	Variable costs per barrel of oil	$30
	Fixed costs per barrel of oil	$40

The Refining Division has been operating at a capacity of 40,000 barrels a day and usually purchases 24,700 barrels of oil from the Extraction Division and 15,000 barrels from other suppliers at $68 per barrel. Assume 300 barrels are transferred from the Extraction Division to the Refining Division for a transfer price of $18 per barrel. The Refining Division sells the 300 barrels at a price of $210 each to customers. What is the operating income of both divisions together?

A) $996,600
B) $33,300
C) $12,900
D) $42,000

10. Some information about NCKU company for 2022 is as follows:

Total fixed manufacturing overhead	$180,000
Total other fixed expenses	$210,000
Total variable manufacturing expenses	$270,000
Total other variable expenses	$360,000
Units produced	90,000 units
Budgeted production	90,000 units
Units sold	50,000 units
Selling price	$42

What are breakeven sales in units using absorption costing if the production units are actually 50,000? (Round any intermediary calculations to the nearest cent and your final answer UP to the next whole unit.)

A) 7,838 units
B) 6,364 units
C) 2,163 units
D) 8,788 units

11. NCKU Corp. manufactures keyboards. The manufacturing cycle efficiency is 37%. What is its manufacturing time for value added if the manufacturing lead time is 142 minutes per keyboard?
A) 103.65 minutes
B) 87.12 minutes
C) 52.54 minutes
D) 89.46 minutes

12. Happy Coffee Products manufactures coffee related products. Happy Coffee Products has a policy of adding a 10% markup to full costs and currently has excess capacity. The following information pertains to the company's normal operations per month:

Output units	20,000	units
Machine-hours	4,000	hours
Direct manufacturing labor-hours	15,000	hours
Direct materials per unit	$140	
Direct manufacturing labor per hour	$20	
Variable manufacturing overhead costs	$380,000	
Fixed manufacturing overhead costs	$1,500,000	
Product and process design costs	$1,400,000	
Marketing and distribution costs	$1,000,000	

Happy Coffee Products is approached by an overseas customer to fulfill a one-time-only special order for 5,000 units. All cost relationships remain the same except for a one-time setup charge of $60,000. No additional design, marketing, or distribution costs will be incurred. What is the minimum acceptable bid per unit on this one-time-only special order? (Round your final answer to the nearest cent.)
A) $186
B) $174
C) $261
D) $246

13. Sales-mix variance = $369,000 (F), sales-quantity variance = $200,000 (F), flexible-budget variance = $150,000 (F), market-size variance = $90,000 (U), market-share variance = $290,000 (F), calculate the sales-volume variance.
A) $200,000 (F)
B) $919,000 (F)
C) $769,000 (F)
D) $569,000 (F)

14. 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) Sales forecasts for final products, bills of materials, and information about a company's inventories of materials, components, and products are inputs into MRP systems.
   D) In a just-in-time system, suppliers are selected primarily on the basis of their ability to provide materials and products at the lowest possible price.

二、計算及申論題(58%)

1. (10%) Apollo College offers only high-tech graduate-level programs. Apollo has two principal operating departments, Department A and Department B, and two support departments, Department X and Department Y. Department X is responsible for facility and technology maintenance and the base used to allocate facility and technology maintenance is budgeted total maintenance hours. Department Y is responsible for enrollment services and the base used to allocate enrollment services is number of credit hours for a department. The budget of Department X is $400,000, while the budget of Department Y is $1,100,000. The following chart summarizes budgeted amounts and allocation-base amounts used by each department:

	Services Provided: (Annually)				
	Budget	Depart. A	Depart. B	Depart. X	Depart. Y
Depart. X (in maintenance hours)	$400,000	2,000	1,000	0	5,000
Depart. Y (in credit hours)	$1,100,000	24,000	36,000	2,000	0

Required:
Prepare a schedule which allocates support department costs using the **<u>reciprocal method</u>**.

2. (10%) 近年由於各國政府提高關稅、疫情封城導致工廠運作停擺、缺工、塞港，乃至戰爭導致原物料供應中斷等情況，使得全球供應鏈大受影響，製造業意識到以往的全球化生產模式恐需調整，開始進行供應鏈的重新布局，供應鏈從以往的全球化下的「長鏈」模式逐漸走向在地化、區域化的「短鏈」模式，試從製造業公司的角度，分析當供應鏈從全球化走向在地化、區域化的成本及效益。

3.(18%) NCKU Manufacturing Company makes product NC-01 and uses ***FIFO process-costing system***. There are two departments, Producing Department and Testing Department, to make the product NC-01. In Producing Department, the direct materials are added at the beginning of the process while conversion costs are added evenly during the process. The spoiled units of producing department are detected on inspection at the end of the process and are discarded at a net disposal value of zero. The following presents the summary data of Producing Department for February 2023:

	Physical Units	Direct Materials	Conversion Costs
Work-in-Process (WIP), beginning (February 1)	3,000	$27,000	$15,000
Degree of completion of beginning WIP		100%	50%
Started during February	12,000		
Good units completed and transferred out during February	11,000		
WIP, ending (February 28)	2,000		
Degree of completion of ending WIP		100%	75%
Total costs added during February		$108,000	$143,000
Normal spoilage as a percentage of good units	10%		
Degree of completion of normal spoilage		100%	100%
Degree of completion of abnormal spoilage		100%	100%

The units completed in Producing Department will be transferred to Test Department directly. In Testing Department, the direct materials are added at the end of the process while conversion costs are added evenly during the process. There's no spoilage in test department during February. The following presents the summary data of Testing Department for February 2023:

	Physical Units	Transferred-in Costs	Direct Materials	Conversion Costs
Work-in-Process (WIP), beginning (February 1)	2,500	$47,500	0	$20,000
Degree of completion of beginning WIP			0%	40%
Started during February	?	?		
Good units completed and transferred out during February	12,500			
WIP, ending (February 28)	1,000			
Degree of completion of ending WIP			0%	60%
Total costs added during February			$275,000	$242,000

Required:

Prepare a production cost worksheet for the **Testing Department**.

4. (12%) NCKU Company has received three proposals for its new vehicle-painting machine. The new machine is expected to be used for 4 years. Information on each proposal is as follows:

	Proposal X	**Proposal Y**	**Proposal Z**
Initial investment in equipment	$330,000	$200,000	$240,000
Working capital needed	0	0	10,000
Annual cash saved by operations:			
Year 1	110,000	80,000	100,000
Year 2	110,000	62,000	100,000
Year 3	110,000	66,000	100,000
Year 4	110,000	34,000	100,000
Salvage value end of year:			
Year 1	100,000	80,000	60,000
Year 2	80,000	60,000	50,000
Year 3	40,000	40,000	30,000
Year 4	10,000	20,000	15,000
Working capital returned	0	0	10,000

Required:

Which proposal will you choose based on

(a) Payback method (Please show your calculation and explain) (6%)

(b) Net present value method. Assume the discount rate is 10%. (Please show your calculation and explain) (6%)

5. (8%) ACC Corporation produces a special product AC001. ACC Corporation produces AC001 in batches. To manufacture a batch of the AC001s, ACC Corporation must set up the machines and molds. Setup costs are batch-level costs because they are associated with batches rather than individual units of products. A separate Setup Department is responsible for setting up machines and molds for different styles of AC001. Setup overhead costs consist of some costs that are variable and some costs that are fixed with respect to the number of setup-hours. The following information pertains to February 2023:

	Static-budget Amounts	**Actual Amounts**
Units of AC001 produced and sold	30,000	32,000
Batch size (number of units per batch)	200	250
Setup-hours per batch	5	4
Variable overhead cost per setup hour	$10	$9
Total fixed setup overhead costs	$30,000	$31,000

Required:

a. Calculate the efficiency variance and spending variance for variable overhead setup costs. (4%)

b. Calculate the spending variance and the production-volume variance for fixed overhead setup costs. (4%)