

考 試 科 目	成本與管理會計學	系 所 別	會計研究所 會計組一般生	考 試 時 間	2 月 11 日(星期五)第三節
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第一題 (10%)

Beta Corp. is planning the 2022 operating budget. Average operating assets of \$1,800,000 will be used during the year and unit selling prices are expected to average \$100 each. Variable costs of the division are budgeted at \$40 per unit, while fixed costs are set at \$300,000. The company's required rate of return is 18%.

Required:

- (A) The division manager receives a bonus of 50% of residual income. What is his anticipated bonus for 2022, assuming he achieves the 20% ROI from sales? (5%)
- (B) If there is another branch company to jointly utilize one-third of Beta's operating assets in 2022, Beta's sales volume will decrease to 3,000 units. What is the new ROI for joint utilization of operating assets? (5%)

第二題 (24%)

Robert Inc. desires to buy a new foundry equipment for newly developed models which are required for their R&D staffs. They have received three proposals from suppliers. These three proposals have same costs for initial investment in equipment. However, the purchasing department struggles to find a supplier willing to offer a 10% discount for initial investment in equipment of proposal C. Other information on each proposal is as follows:

	Proposal A	Proposal B	Proposal C
Initial investment in equipment	\$90,000	\$90,000	?
Annual cash increase in operations:			
Year 1	80,000	45,000	90,000
Year 2	10,000	45,000	0
Year 3	45,000	45,000	0
Salvage value	0	0	0
Estimated life	3 years	3 years	1 year

The company uses straight-line depreciation for all capital assets.

Required:

- (A) Compute the payback period, net present value, and accrual accounting rate of return with initial investment, for each proposal. Use a required rate of return of 14%. (15%)
- (B) Rank each proposal 1, 2, and 3 using each method separately. Which proposal is best? Why? (5%)
- (C) Accountant Mary argues that we should consider original cost of an old equipment, initial working capital investment, and depreciation cost, as well as after-tax cash flow from operations when evaluating component of net-initial-investment cash flows for proposals. Do you agree her opinion? Why? (4%)

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第三題 (15%)

The XYZ Company produces four products – XX, YY, ZZ, and BB by a joint production process. During October, joint costs of production totaled \$400,000. The company treats product BB as a byproduct that can be sold for \$6 per unit at split-off point by incurring disposal costs of \$1 per unit. No joint cost is to be allocated to the byproduct. There were 100 units of BB on October 1. In October, 2,000 units of byproduct BB were produced and 800 units were sold. Products XX, YY, and ZZ are further refined and then sold. XYZ uses the FIFO inventory flow assumption to cost the products. Assume no beginning or ending work-in-process inventory. Data related to October are as follows:

	XX	YY	ZZ
Beginning inventory in units	200	400	500
Units sold	1,800	4,000	6,300
Units produced	2,000	4,000	6,000
Separable processing costs	\$50,000	\$80,000	\$150,000
Selling price per unit	\$100	\$80	\$60

Required: (Consider each situation independently.)

- (A) If XYZ Company allocates the joint costs to main products using the NRV (net realizable value) method and accounts for the byproduct using the production method, what is the ending inventory cost for product YY?
- (B) If each product could be sold immediately at the split-off point for the following selling price: XX, \$70; YY, \$65; and ZZ, \$36. The units produced remain unchanged whether the company processes the products further beyond the split-off point or not. Please ignore the units sold above. No matter whether the company sells product XX, YY, and ZZ at the split-off point or after further processing, all of the output could be sold.
 - (1) Which of the main products should XYZ Company sell at the split-off point to maximize operating income? Support your answer with computations.
 - (2) Suppose the \$150,000 cost of ZZ's separable processing includes \$38,000 of allocated fixed costs, and the facilities that would be used to further process ZZ have an alternative use to generate revenues of \$20,000 and variable costs of \$5,000. What effect would selling product ZZ at the split-off point have on the company's operating income instead of selling it after further processing?

第四題 (18%)

The Nature Corporation produces a wide variety of fruit vinegars. One of its popular products is FV-ABC, a mixture of direct materials - Fruit A, Fruit B, and Fruit C. The standard mix for producing a single batch of FV-ABC is as follows:

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<u>Fruit</u>	<u>Standard quantity</u>	<u>Standard unit cost</u>
A	90	\$ 10
B	270	\$ 8
C	140	\$ 6

Work-in-process inventories are insignificant and can be ignored. Changing the standard mix of direct material quantities does not significantly affect the overall end product. The total direct materials yield variance for January is \$19,500 unfavorable. The actual quantities and costs of the materials purchased and placed in production during January were as follows (There was no beginning direct materials inventory.):

<u>Fruit</u>	<u>Actual quantity purchased and used</u>	<u>Actual cost</u>
A	38,000	\$ 402,800
B	102,000	\$ 775,200
C	60,000	\$ 354,000

Required:

- How many batches of FV-ABC were produced during January? (5%)
- Compute the total direct materials mix variance for January, indicating whether the variance is favorable or unfavorable. (5%)
- According to your analysis, comment on the results of variance analysis and recommend possible ways for the company's future improvement. (8%)

第五題 (33%)

Tech Toys produces electronic toys for children and young adults. Chips are crucial components for toys that feature light, sound, and motion. However, the global chip shortage after the Covid-19 pandemic causes concern for numerous products and business, including the toy industry, and has been squeezing supply from electronics to white goods to toys. The situation is compounded by competition for the limited supply between electronics manufactures and automakers. 91% of chip manufacturing is based in Asia, mostly in Taiwan and South Korea. With the bulk of chip production concentrated in a handful of suppliers, analysts warn that the shortage is likely to last throughout 2022 and even into 2023 as production problem continue to bite. Unfortunately, it seems likely that toy companies will be at the back of the queue when it comes to sourcing chips, behind tech giants like Apple and car manufacturers, partly because they can't compete on price and partly because they lack their collective clout when it comes to securing supplies. For example, one of the world's biggest chipmakers – Taiwan Semiconductor Manufacturing Company – has prioritized Apple and cars.

Tech Toys manufactures the products in a factory located in China and ships the products to the retailers in the U.S. and Europe. The company has run just in time from sourcing, production, to delivering for almost two decades. The production process of Tech Toys consists of two basic operations. In the first operation, plastic

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pieces are molded in the plastics department. These pieces are then transferred to the assembly department, where direct materials are added after some assembly has been done. For example, plastic pieces of the toy are put together, then the electronic parts are added, and finally some details are painted on the sides and back. The direct materials, including chips, are added in the assembly department when the process is 75% complete.

Data for the assembly department for January 2022 are as follows. Beginning inventory is 80% complete and ending inventory is 25% complete.

Beginning inventory costs (in thousands) for the assembly department:

Transferred in	\$4,000
Direct materials	2,000
Conversion costs	1,600
Total cost	<u>\$7,600</u>

Costs (in thousands) incurred in the assembly department during current period:

Transferred in	\$36,000
Direct materials	18,000
Conversion costs	16,000
Total cost	<u>\$70,000</u>

Physical units in the assembly department:

Units in beginning inventory	2,000
Units started this month	18,000
Total units completed and transferred out	14,800
Normal spoilage	1,000 (100% complete)
Abnormal spoilage	1,000 (100% complete)

Required:

- (A) Choose a process costing method for the assembly department. Explain your choice and describe its pros and cons. Prepare journal entries for the work of January 2022 using the method you choose. (23%)
- (B) Jerry Wang is the founder of Tech Toys and is now the chairman of the board. He is concerned about the global chip shortage and wondering why the chipmakers can't make more and why there aren't more chipmakers as there is a huge demand for chips in the foreseeable future. He also would like to know how to deal with the chip shortage and other global issues facing companies like Tech Toys in 2022. Write a memo to Jerry Wang discussing the issues he is concerned and would like to know, together with your recommendations and suggested actions to the top management (in bullet points or numbered lists). You are encouraged to provide real-life business examples anywhere appropriate in the memo. (10%)

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- 一、作答於試題上者，不予計分。
二、試題請隨卷繳交。