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**I. Multiple-Choice Questions (40%): Select the best answer for each question (2% for each question)**

1. Muy Company, a producer of salsa, has the following information:

Income tax rate	30%
Selling price per unit	\$5.00
Variable cost per unit	\$3.00
Total fixed costs	\$90,000.00

\_\_\_\_\_ must be sold to obtain a targeted after-tax income of \$14,000.

- (a) 45,000 units; (b) 52,000 units; (c) 55,000 units;  
(d) 60,000 units; (e) none of the above

2. Assuming a constant mix of 3 units of Alpha for every 1 unit of Beta, a selling price of \$21.60 for Alpha and \$28.80 for Beta, variable costs per unit of \$14.40 for Alpha and \$16.80 for Beta, and total fixed costs of \$53,760, the break-even point in units would be:

- (a) 4,800 units of Alpha and 1,600 units of Beta  
(b) 1,200 units of Alpha and 400 units of Beta  
(c) 1,600 units of Alpha and 4,800 units of Beta  
(d) 40,320 units of Alpha and 13,440 units of Beta  
(e) none of the above

3. Nicklaus, Inc., currently produces 110,000 units at a cost of \$440,000. Next year Nicklaus, Inc., expects to produce 120,000 units. Nicklaus' relevant range is 100,000 to 120,000 units. If the cost is variable and 120,000 units are produced, the cost:

- (a) will stay the same; (b) will increase to \$480,000  
(c) will decrease; (d) will be indeterminate;  
(e) non of the above

4. A single-product company prepares income statements using both absorption and variable costing methods. Manufacturing overhead cost applied per unit produced under absorption costing in year 2 was the same as in year 1. The year 2 variable costing statement reported a profit whereas the year 2 absorption costing statement reported a loss. The difference in reported income could be explained by units produced in year 2 being:

- (a) less than units sold in year 2.  
(b) less than the activity level used for allocating overhead to the product.  
(c) in excess of the activity level used for allocating overhead to the product.  
(d) in excess of units sold in year 2.  
(e) none of the above.

Use the following to answer questions 5-6:

The controller of Kleyman Company estimates the amount of materials handling

(背面仍有題目,請繼續作答)

編號： 355 系所：會計學系甲組

科目：成本與管理會計學

本試題是否可以使用計算機：可使用，不可使用（請命題老師勾選）

overhead cost that should be allocated to the company's two products using the data that are given below:

	<i>Wall Mirrors</i>	<i>Specialty Windows</i>
Total expected units produced .....	4,000	3,000
Total expected material moves.....	500	400
Expected direct labor-hours per unit.....	7	6

The total materials handling cost for the year is expected to be \$28,400.40.

5.If the materials handling cost is allocated on the basis of direct labor-hours, how much of the total materials handling cost should be allocated to the wall mirrors? (Round off your answer to the nearest whole dollar.)

(a)\$15,293; (b) \$16,176; (c) \$17,287 ; (d) \$14,200 ; (e) none of the above

6.If the materials handling cost is allocated on the basis of material moves, how much of the total materials handling cost should be allocated to the specialty windows? (Round off your answer to the nearest whole dollar.)

(a) \$12,622; (b) \$13,108; (c) \$12,224;  
(d) \$14,200; (e) none of the above.

7. Division X makes a part that it sells to customers outside of the company. Data concerning this part appear below:

Selling price to outside customers.....	\$75
Variable cost per unit .....	\$50
Total fixed costs .....	\$400,000
Capacity in units.....	25,000

Division Y of the same company would like to use the part manufactured by Division X in one of its products. Division Y currently purchases a similar part made by an outside company for \$70 per unit and would substitute the part made by Division X. Division Y requires 5,000 units of the part each period. Division X has ample excess capacity to handle all of Division Y's needs without any increase in fixed costs and without cutting into outside sales of the part. What is the lowest acceptable transfer price from the standpoint of the selling division?

(a) \$75; (b) \$66; (c) \$16; (d) \$50; (e) none of the above.

8. Wenig Inc. has a working material that originally cost \$73,500. This material has a current scrap value of \$45,600, but if reworked at a cost of \$6,600, it could be sold for \$58,100. What would be the incremental effect on the company's overall profit of reworking and selling the material rather than selling it as a scrap?

(a) -\$22,000; (b) -\$67,600; (c) \$51,500; (d) \$5,900; (e) none of the above.

編號: 355 系所: 會計學系甲組

科目: 成本與管理會計學

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9. Marley Company makes three products (X, Y, & Z) with the following characteristics:

	<i>Product</i>		
	<i>X</i>	<i>Y</i>	<i>Z</i>
Selling price per unit .....	\$10	\$15	\$20
Variable cost per unit .....	\$6	\$10	\$10
Machine hours per unit.....	2	4	10

The company has a capacity of 2,000 machine hours, but there is virtually unlimited demand for each product. In order to maximize total contribution margin, how many units of each product should the company produce?

- (a) 2,000 units of X, 500 units of Y, and 200 units of Z
- (b) 0 units of X, 0 units of Y, and 200 units of Z
- (c) 0 units of X, 500 units of Y, and 0 units of Z
- (d) 1,000 units of X, 0 units of Y, and 0 units of Z

**Use the following to answer questions 10-11:**

The Flint Fan Company is considering the addition of a new model fan, the F-27, to its current product lines. The expected cost and revenue data for the F-27 fan are as follows:

Annual sales .....	4,000 units
Unit selling price.....	\$58
Unit variable costs:	
Production.....	\$34
Selling.....	\$4
Avoidable fixed costs per year:	
Production.....	\$20,000
Selling.....	\$30,000

If the F-27 model is added as a new product line, it is expected that the contribution margin of other product lines at Flint will drop by \$7,000 per year.

- 10. If the F-27 product line is added next year, the change in operating income should be:
  - (a) \$30,000 increase; (b) \$5,000 decrease; (c) \$23,000 increase;
  - (d) \$15,000 increase; (e) none of the above.
- 11. What is the lowest unit selling price that could be charged for the F-27 model and still make it economically desirable for Flint to add the new product line?
  - (a) \$52.25; (b) \$50.50; (c) \$55.75; (d) \$49.00; (e) none of the above.
- 12. All the following are considered to be benefits of participative budgeting, except for:
  - (a) Individuals at all organizational levels are recognized as being part of a

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team; this results in greater support for the organization.

- (b) The budget estimates are prepared by those in directly involved in activities.
- (c) When managers set their own targets for the budget, top management need not be concerned with the overall profitability of operations.
- (d) Managers are held responsible for reaching their goals and cannot easily shift responsibility by blaming unrealistic goals set by others.

13. Rhett Company manufactures and sells dress shirts. Each shirt (unit) requires 3 yards of cloth. Selected data from Rhett's master budget for next quarter are shown below:

	<i>April</i>	<i>May</i>	<i>June</i>
Budgeted sales (in units) .....	26,000	28,000	32,000
Budgeted production (in units).....	28,000	32,000	36,000
Desired ending inventory of cloth (in yards) .....	2,100	2,800	3,000

How many yards of cloth should Rhett plan on purchasing in May?

- (a) 84,700 yards;    (b) 96,700 yards; (c) 98,100 yards;
  - (d) 98,800 yards;    (e) none of the above
14. A labor efficiency debit balance indicates that:
- (a) The wage rate paid to production workers was less the standard.
  - (b) The wage rate paid to production workers was above the standard.
  - (c) Less labor time was spent on production than was called for by the standard.
  - (d) More labor time was spent on production than was called for by the standard.

Use the following to answer questions 15-16:

Spacer Company has two service departments and two operating departments. Budgeted costs and budgeted activity in the various departments for last year are shown below:

	<i>Custodial</i>		<i>Cutting</i>	<i>Assembly</i>
	<i>Services</i>	<i>Cafeteria</i>	<i>Department</i>	<i>Department</i>
Departmental costs.....	\$50,400	\$28,000	\$120,000	\$200,000
Square feet occupied .....	500	1,000	4,000	5,000
Number of employees .....	10	15	75	100
Machine-hours .....			10,000	15,000

Service department costs are allocated to operating departments with the costs of Custodial Services allocated on the basis of square feet of space occupied and the costs of the Cafeteria on the basis of number of employees. The departmental costs for the cutting and assembly departments are overhead costs. Predetermined overhead rates in the Cutting and Assembly departments are based on machine-hours.

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15. Assume that the company uses the direct method of allocation. The amount of Custodial Services cost allocated to the Cutting Department would be:

- (a) \$0; (b) \$20,160; (c) \$22,400;  
(d) \$19,200 (e) none of the above

16. Assume that the company uses the step method of allocation with Custodial Services allocated first. The amount of cost allocated from the Cafeteria to the Cutting Department would be:

- (a) \$0; (b) \$12,000; (c) \$14,160  
(d) \$12,390; (e) none of the above

**The following information applies to questions 17 and 18.**

The Barnett Company has assembled the following data pertaining to certain costs that cannot be easily identified as either fixed or variable. Barnett Company has heard about a method of measuring cost functions called the high-low method and has decided to use it in this situation.

<u>Cost</u>	<u>Hours</u>
\$24,900	5,250
24,000	5,500
36,400	7,500
44,160	9,750
45,000	9,500

17. What is the cost function?

- (a)  $y = \$43,191 + \$0.19X$ ; (b)  $y = \$4,875 + \$5.25X$   
(c)  $y = \$41,900 + \$0.23X$ ; (d)  $y = \$2,430 + \$4.28X$   
(e) none of the above.

18. What is the estimated total cost at an operating level of 8,000 hours?

- (a) \$43,740; (b) \$36,670; (c) \$46,875;  
(d) \$37,125; (e) none of the above.

19. Hawkeye Cleaners has been considering the purchase of an industrial dry-cleaning machine. The existing machine is operable for three more years and will have a zero disposal price. If the machine is disposed of now, it may be sold for \$60,000. The new machine will cost \$200,000 and an additional cash investment in working capital of \$60,000 will be required. The new machine will reduce the average amount of time required to wash clothing and will decrease labor costs. The investment is expected to net \$50,000 in additional cash inflows during the year of acquisition and \$150,000 each additional year of use. The new machine has a three-year life, and zero disposal value. These cash flows will generally occur throughout the year and are recognized at the end of

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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 net present value of the investment, assuming the required rate of return is 10%? Would the company want to purchase the new machine?

- (a) \$82,000; yes
- (b) \$50,000; no
- (c) \$(50,000); yes
- (d) \$(82,000); no
- (e) none of the above.

20. Which of the following statements is true regarding main products and byproducts?

- (a) Product classifications do not change over the short run.
- (b) Product classifications do not change over the long run.
- (c) Product classifications may change over time.
- (d) The cause-and-effect criterion determines the classification.
- (e) none of the above.

**II. (12%)** Delphi Company has developed a new product that will be marketed for the first time during the next fiscal year. Although the Marketing Department estimates that 35,000 units could be sold at \$36 per unit, Delphi's management has allocated only enough manufacturing capacity to produce a maximum of 25,000 units of the new product annually. The fixed expenses associated with the new product are budgeted at \$450,000 for the year. The variable expenses of the new product are \$16 per unit.

**Required:**

- a. What is the degree of operating leverage for the new product if 25,000 units are sold for \$36 per unit?
- b. The Marketing Department would like more manufacturing capacity to be devoted to the new product. What would be the percentage increase in net operating income for the new product if its unit sales could be expanded by 10% without any increase in fixed expenses and without any change in the unit selling price and unit variable expense?
- c. Delphi's management has stipulated that the new product must earn a profit of at least \$125,000 in the next fiscal year. What unit selling price would achieve this target profit if all of the manufacturing capacity allocated by management is used and all of the output can be sold at that selling price?

**III. (20%)** Edwards Inc. uses the FIFO method in its process costing system. The following data concern the operations of the company's first processing department for a recent month.

編號: 355 系所: 會計學系甲組

科目: 成本與管理會計學

本試題是否可以使用計算機:  可使用,  不可使用 (請命題老師勾選)

Work in process, beginning:	
Units in process.....	100
Stage of completion with respect to materials .....	50%
Stage of completion with respect to conversion .....	90%
Costs in the beginning inventory:	
Materials cost .....	\$260
Conversion cost.....	\$3,366
Units started into production during the month .....	20,000
Units completed and transferred out .....	19,800
Costs added to production during the month:	
Materials cost .....	\$99,650
Conversion cost.....	\$745,329
Work in process, ending:	
Units in process.....	300
Stage of completion with respect to materials .....	60%
Stage of completion with respect to conversion .....	20%

**Required:****Using the FIFO method:**

1. Determine the cost of units transferred out of the department during the month.
2. Determine the cost of ending work in process inventory in the department.

IV. (12%) Omstadt Company produces and sells only two products that are referred to as RIPS and PITS. Production is "for order" only, and no finished goods inventories are maintained; work in process inventories are negligible. The following data have been extracted relating to last month:

	<u>RIPS</u>	<u>PITS</u>
Sales .....	\$180,000	\$180,000
Manufacturing costs:		
Materials.....	\$18,000	\$24,000
Labor .....	\$54,000	\$48,000
Overhead .....	\$72,000	\$84,000
Selling expenses .....	\$14,400	\$10,080
Administrative expenses .....	\$12,000	\$18,000

An analysis has been made of the manufacturing overhead. Although the items listed above are traceable to the products, \$36,000 of the overhead assigned to RIPS and \$72,000 of that assigned to PITS is fixed. The balance of the overhead is variable. Selling expenses consist entirely of commissions paid as a percentage of sales. Direct labor is completely variable. Administrative expenses in the data above are fixed and cannot be traced to the products but have been arbitrarily allocated to the products.

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編號： 355 系所：會計學系甲組

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本試題是否可以使用計算機：可使用，不可使用（請命題老師勾選）

**Required:** Prepare a segmented income statement, in total and for the two products.  
Use the contribution approach.

**V. (16%)** 大成公司擬採用作業基礎成本制獲得內部決策所須資訊，其 95 年度作業基礎成本制之相關資料分別如下：

**資源支出：**

工資與薪資	.....	\$420,000
其他支出	.....	240,000
合計	.....	660,000

**各作業成本庫之資源耗用比例：用於第一階段分攤**

	產量	訂單處理	客戶支援	其他	合計
工資與薪資	..... 30%	35%	25%	10%	100%
其他支出	..... 25%	15%	20%	40%	100%

作業成本庫	作業量衡量方式	預計全年總作業量
產量	直接人工時數	10,000
訂單處理	訂單數	500
客戶支援	客戶數	100
其他	不分攤至產品或客戶	不適用

大成公司於 95 年度完成一個新客戶新泰公司的訂單(該客戶在該年度裏沒有訂購其他產品)，有關其訂單的資料如下：

售價.....	每單位\$295
訂購量.....	100 單位
直接材料.....	每單位\$264
直接人工時數.....	每單位 0.5 小時
直接人工工資率.....	每小時\$25

**試求算：**就大成公司而言，在作業基礎成本制下，該訂單之產品利潤及新泰公司之客戶別利潤分別為何？