

Problem 1 [20%]

SuperCo is a manufacturer of computer chips and has two departments: cutting and finishing. The cutting department uses FIFO method of process costing and the finishing department uses weighted-average method of process costing. In both departments, conversion costs are added evenly during the process. Direct materials are added at the beginning of the process at cutting department, but are added at the end of the process at finishing department.

In both departments, spoiled units are detected upon inspection at the end of the process and are disposed of at zero net disposal value. For cutting department, spoilage is expected to be 10% of good units. For finishing department, spoilage is expected to be 8% of good units. All completed work is transferred to the next department. Summary data for October in both departments follow:

Cutting Department	Physical Units	Direct Materials	Conversion Costs
Work in process, beginning inventory (October 1)	6,000	\$ 9,000	\$ 5,400
Degree of completion of beginning work in process		100%	60%
Started during October	50,000		
Good units completed and transferred out during October	41,000		
Work in process, ending inventory (October 31)	8,400		
Degree of completion of ending work in process		100%	30%
Total costs added during October		\$92,500	\$74,432

Finishing Department	Physical Units	Transferred-in Costs	Direct Materials	Conversion Costs
Work in process, beginning inventory (October 1)	21,000	\$78,920	0\$	\$29,400
Degree of completion of beginning work in process		100%	0%	70%
Started during October	41,000			
Good units completed and transferred out during October	44,000			
Work in process, ending inventory (October 31)	14,000			
Degree of completion of ending work in process		100%	0%	40%
Total costs added during October		?	\$9,600	\$77,800

Required: (Round unit-cost calculations to four decimal places when necessary. Round final totals to the nearest dollar.)

- (1) For the finishing department, determine the costs assigned to normal spoilage (5%)
- (2) For the finishing department, determine the costs assigned to abnormal spoilage. (5%)
- (3) For the finishing department, determine the costs assigned to the units completed and transferred out. (5%)
- (4) For the finishing department, determine the costs assigned to the units in ending work in process. (5%)

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Problem 2 [20%]

Textual Company began operations at the start of the current year and uses throughput costing. Planned and actual production equaled 20,000 units, and sales totaled 17,500 units at \$95 per unit. Income statement for the year is as follows:

Textual Company		
Income Statement		
Sales revenue		\$3,500,000
Direct material cost of goods sold		<u>630,000</u>
Throughput margin		\$2,870,000
Direct labor	\$ 320,000	
Variable manufacturing overhead	560,000	
Fixed manufacturing overhead	680,000	
Selling, general and administrative costs	<u>860,000</u>	<u>2,420,000</u>
Operating income		<u>\$ 450,000</u>

Required:

- (1) If Textual Company uses absorption costing, how much cost would be held in year-end inventory (10%)?
- (2) If Textual Company uses variable costing, how much of total cost for the year would appear on the income statement (10%)?

Problem 3 [20%]

Essence Company manufactures two fragrances in a joint process. In May, \$400,000 of direct materials were processed at a conversion cost of \$600,000, resulting in 16,000 liters of Gentleman, a men's cologne, and 4,000 liters of Lady, a women's perfume. Gentleman sells for \$70 per liter and Lady sells for \$120 per liter. Management could further process each of these fragrances in separable processes to manufacture more refined products. Gentleman is processed separately at a cost of \$15 per liter, with the resulting product, Gentleman-X, selling for \$90 per liter. Lady is processed separately at a variable cost of \$20 per liter, and the resulting product, Lady-X, sells for \$200 per liter.

Required: Determine the joint production costs allocated to Gentleman in May by using:

- (1) The physical-units method. (5%)
- (2) The relative-sales-value method. (5%)
- (3) The net-realizable-value method. (5%)
- (4) Constant gross-margin percentage net-realizable-value method. (5%)

Problem 4 [20%]

Kwatch Company uses a standard costing system. In June, budgeted direct manufacturing labor-hour is the 120,000, budgeted direct manufacturing labor is \$2,400,000, budgeted variable manufacturing overhead is \$1,440,000, and budgeted fixed manufacturing overhead is \$1,920,000.

The actual results for June are summarized as follows:

Direct materials price variance (based on purchases)	\$ 528,000 F
Direct materials efficiency variance	207,000 U
Variable manufacturing overhead flexible-budget variance	31,050 U
Variable manufacturing overhead efficiency variance	54,000 U
Fixed manufacturing overhead spending variance	127,620 F
Fixed manufacturing overhead production-volume variance	384,000 U

The standard cost per ounce of direct materials is \$34.50. The standard allowance is two ounces of direct materials for each unit of product. There was no beginning inventory of direct materials. There was no beginning or ending work in process. In June, the direct materials price variance was a favorable \$3.30 per ounce.

Manufacturing overhead is allocated to each unit based on direct manufacturing labor hours. Each unit is allowed 2.4 standard manufacturing labor-hours. Due to an unexpected raise in regulatory minimum wage, the actual average wage rate in June exceeded the standard average wage rate by \$0.50 per hour.

Required: Determine the following for June:

- (1) Total ounces of direct materials purchased. (5%)
- (2) Total ounces of direct materials used. (5%)
- (3) Direct manufacturing labor price variance. (5%)
- (4) Direct manufacturing labor efficiency variance. (5%)

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Problem 5 [20%]

Stylus, Inc is a sunglass wholesaler. Stylus estimates total sales for the year ending June 30, 2017 to be \$4,800,000. The average selling price of the company's products is \$200 per unit. All sales are on account. On December 1, 2016, actual and projected sales are as follows:

	Actual	Projected
October 2016	\$560,000	
November 2016	640,000	
December 2016		\$ 660,000
January 2017		500,000
February 2017		480,000

On December 1, 2016, selected general ledgers carry the following balances: Cash \$176,000, Inventory \$130,400, and Accounts Payable \$272,000.

All customers are billed when sunglasses are ordered. Invoices are payable within 30 days. Sales terms call for a 3% discount if payment is made within the month invoiced. From past experience, Stylus' accountant projects 50% of invoices will be paid in the month invoiced, 30% will be paid in the following month, and 14% of invoices will be paid two months after the month of invoice. The remaining 6% will be uncollectible.

All purchases are payable within 15 days. Approximately 60% of the purchases in a month are paid that month, and the rest the following month. The average unit purchase cost is \$160. Target ending inventories are 500 units plus 10% of the next month's unit sales.

Total budgeted marketing, distribution, and customer-service costs for the year are \$1,200,000. Of this amount, \$240,000 are considered fixed (and include depreciation of \$60,000). The remainder varies with sales. Both fixed and variable marketing, distribution, and customer-service costs are paid as incurred.

Required:

- (1) On cash budget for December 2016, determine the ending cash balance. (10%)
- (2) On cash budget for January 2017, determine the ending cash balance. (10%)

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