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**ACC 601 Managerial Accounting
Group Case 3 (160 points)**

Instructions:

- 1. As a group, complete the following activities in good form. Use excel or word only. Provide all supporting calculations to show how you arrived at your numbers**
- 2. Add only the names of group members who participated in the completion of this assignment.**
- 3. Submit only one copy of your completed work via Moodle. Do not send it to me by email.**
- 4. Due: No later than the last day of Module 7. Please note that your professor has the right to change the due date of this assignment.**

Part A: Capital Budgeting Decisions

Matheson Electronics has just developed a new electronic device that it believes will have broad market appeal. The company has performed marketing and cost studies that revealed the following information:

- a. New equipment would have to be acquired to produce the device. The equipment would cost \$138,000 and have a six-year useful life. After six years, it would have a salvage value of about \$24,000.
- b. Sales in units over the next six years are projected to be as follows:

Year	Sales in Units
1	7,000
2	12,000
3	14,000
4-6	16,000

- c. Production and sales of the device would require working capital of \$46,000 to finance accounts receivable, inventories, and day-to-day cash needs. This working capital would be released at the end of the project's life.
- d. The devices would sell for \$55 each; variable costs for production, administration, and sales would be \$35 per unit.
- e. Fixed costs for salaries, maintenance, property taxes, insurance, and straight-line depreciation on the equipment would total \$149,000 per year. (Depreciation is based on cost less salvage value.)
- f. To gain rapid entry into the market, the company would have to advertise heavily. The advertising costs would be:

Year	Amount of Yearly Advertising
1–2	\$75,000
3	\$55,000
4–6	\$45,000

g. The company's required rate of return is 13%.

Required:

1. Compute the net cash inflow (incremental contribution margin minus incremental fixed expenses) anticipated from sale of the device for each year over the next six years.
- 2-a. Using the data computed in (1) above and other data provided in the problem, determine the net present value of the proposed investment.
- 2-b. Would you recommend that Matheson accept the device as a new product?

B. Master Budget

You have just been hired as a new management trainee by Earrings Unlimited, a distributor of earrings to various retail outlets located in shopping malls across the country. In the past, the company has done very little in the way of budgeting and at certain times of the year has experienced a shortage of cash. Since you are well trained in budgeting, you have decided to prepare a master budget for the upcoming second quarter. To this end, you have worked with accounting and other areas to gather the information assembled below.

The company sells many styles of earrings, but all are sold for the same price—\$13 per pair. Actual sales of earrings for the last three months and budgeted sales for the next six months follow (in pairs of earrings):

January (actual)	20,600	June (budget)	50,600
February (actual)	26,600	July (budget)	30,600
March (actual)	40,600	August (budget)	28,600
April (budget)	65,600	September (budget)	25,600
May (budget)	100,600		

The concentration of sales before and during May is due to Mother's Day. Sufficient inventory should be on hand at the end of each month to supply 40% of the earrings sold in the following month.

Suppliers are paid \$4.30 for a pair of earrings. One-half of a month's purchases is paid for in the month of purchase; the other half is paid for in the following month. All sales are on credit. Only 20% of a month's sales are collected in the month of sale. An additional 70% is collected in the following month, and the remaining 10% is collected in the second month following sale. Bad debts have been negligible.

Monthly operating expenses for the company are given below:

Variable:	
Sales commissions	4% of sales
Fixed:	

Advertising	\$ 230,000
Rent	\$ 21,000
Salaries	\$ 112,000
Utilities	\$ 8,500
Insurance	\$ 3,300
Depreciation	\$ 17,000

Insurance is paid on an annual basis, in November of each year.

The company plans to purchase \$17,500 in new equipment during May and \$43,000 in new equipment during June; both purchases will be for cash. The company declares dividends of \$17,250 each quarter, payable in the first month of the following quarter.

The company's balance sheet as of March 31 is given below:

Assets	
Cash	\$ 77,000
Accounts receivable (\$34,580 February sales; \$422,240 March sales)	456,820
Inventory	112,832
Prepaid insurance	22,500
Property and equipment (net)	980,000
Total assets	<u>\$ 1,649,152</u>
Liabilities and Stockholders' Equity	
Accounts payable	\$ 103,000
Dividends payable	17,250
Common stock	860,000
Retained earnings	668,902
Total liabilities and stockholders' equity	<u>\$ 1,649,152</u>

The company maintains a minimum cash balance of \$53,000. All borrowing is done at the beginning of a month; any repayments are made at the end of a month.

The company has an agreement with a bank that allows the company to borrow in increments of \$1,000 at the beginning of each month. The interest rate on these loans is 1% per month and for simplicity we will assume that interest is not compounded. At the end of the quarter, the company would pay the bank all of the accumulated interest on the loan and as much of the loan as possible (in increments of \$1,000), while still retaining at least \$53,000 in cash.

Required:

Prepare a master budget for the three-month period ending June 30. Include the following detailed schedules:

- A sales budget, by month and in total.
 - A schedule of expected cash collections, by month and in total.
 - A merchandise purchases budget in units and in dollars. Show the budget by month and in total.
 - A schedule of expected cash disbursements for merchandise purchases, by month and in total.
- A cash budget. Show the budget by month and in total. Determine any borrowing that would be needed to maintain the minimum cash balance of \$53,000.

3. A budgeted income statement for the three-month period ending June 30. Use the contribution approach.
4. A budgeted balance sheet as of June 30.

Part C: Variance Analysis for Decision Making

Marvel Parts, Inc., manufactures auto accessories. One of the company's products is a set of seat covers that can be adjusted to fit nearly any small car. The company has a standard cost system in use for all of its products. According to the standards that have been set for the seat covers, the factory should work 1,055 hours each month to produce 2,110 sets of covers. The standard costs associated with this level of production are:

	Total	Per Set of Covers
Direct materials	\$51,273	\$24.30
Direct labor	\$10,550	5.00
Variable manufacturing overhead (based on direct labor-hours)	\$ 4,853	2.30
		<u>\$31.60</u>

During August, the factory worked only 1,000 direct labor-hours and produced 2,100 sets of covers. The following actual costs were recorded during the month:

	Total	Per Set of Covers
Direct materials (6,800 yards)	\$49,980	\$23.80
Direct labor	\$10,920	5.20
Variable manufacturing overhead	\$ 5,460	2.60
		<u>\$31.60</u>

At standard, each set of covers should require 3.0 yards of material. All of the materials purchased during the month were used in production.

Required:

1. Compute the materials price and quantity variances for August.
2. Compute the labor rate and efficiency variances for August.
3. Compute the variable overhead rate and efficiency variances for August.

D: Measures of Internal Business Process Performance

DataSpan, Inc., automated its plant at the start of the current year and installed a flexible manufacturing system. The company is also evaluating its suppliers and moving toward Lean Production. Many adjustment problems have been encountered, including problems relating to performance measurement. After much study, the company has decided to use the performance measures below, and it has gathered data relating to these measures for the first four months of operations.

	Month			
	1	2	3	4
Throughput time (days)	?	?	?	?
Delivery cycle time (days)	?	?	?	?

Manufacturing cycle efficiency (MCE)	?	?	?	?
Percentage of on-time deliveries	91%	86%	82%	78%
Total sales (units)	3460	3312	3143	3025

Management has asked for your help in computing throughput time, delivery cycle time, and MCE. The following average times have been logged over the last four months:

	Average per Month (in days)			
	1	2	3	4
Move time per unit	0.7	0.5	0.6	0.6
Process time per unit	2.8	2.7	2.6	2.5
Wait time per order before start of production	23.0	25.2	28.0	30.2
Queue time per unit	4.6	5.3	6.1	7.0
Inspection time per unit	0.5	0.6	0.6	0.5

Required:

- 1-a. Compute the throughput time for each month.
- 1-b. Compute the delivery cycle time for each month.
- 1-c. Compute the manufacturing cycle efficiency (MCE) for each month.
2. Evaluate the company's performance over the last four months.
- 3-a. Refer to the move time, process time, and so forth, given for month 4. Assume that in month 5 the move time, process time, and so forth, are the same as in month 4, except that through the use of Lean Production the company is able to completely eliminate the queue time during production. Compute the new throughput time and MCE.
- 3-b. Refer to the move time, process time, and so forth, given for month 4. Assume in month 6 that the move time, process time, and so forth, are again the same as in month 4, except that the company is able to completely eliminate both the queue time during production and the inspection time. Compute the new throughput time and MCE.

E. Preparing Statement of Cash Flows

Comparative financial statements for Weaver Company follow:

Weaver Company Comparative Balance Sheet at December 31		This Year	Last Year
Assets			
Cash	\$	9	\$ 21
Accounts receivable		610	380
Inventory		175	240
Prepaid expenses		10	8
Total current assets		804	649
Property, plant, and equipment		690	580
Less accumulated depreciation		80	70
Net property, plant, and equipment		610	510
Long-term investments		10	48
Total assets		\$ 1,424	\$ 1,207
Liabilities and Stockholders' Equity			
Accounts payable	\$	400	\$ 290
Accrued liabilities		50	60

Income taxes payable	85	78
Total current liabilities	535	428
Bonds payable	390	280
Total liabilities	925	708
Common stock	341	450
Retained earnings	158	49
Total stockholders' equity	499	499
Total liabilities and stockholders' equity	\$ 1,424	\$ 1,207

Weaver Company Income Statement For This Year Ended December 31		
Sales		\$880
Cost of goods sold		490
Gross margin		390
Selling and administrative expenses		203
Net operating income		187
Nonoperating items:		
Gain on sale of investments	\$12	
Loss on sale of equipment	(9)	3
Income before taxes		190
Income taxes		57
Net income		\$133

During this year, Weaver sold some equipment for \$10 that had cost \$49 and on which there was accumulated depreciation of \$30. In addition, the company sold long-term investments for \$50 that had cost \$38 when purchased several years ago. Weaver paid a cash dividend this year and the company repurchased \$109 of its own stock. This year Weaver did not retire any bonds.

Required:

1. Using the direct method, adjust the company's income statement for this year to a cash basis.
2. Using the information obtained in (1) above, along with an analysis of the remaining balance sheet accounts, prepare a statement of cash flows for this year.



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