Chapter 15

BUDGETING: PROFITS, SALES, COSTS, AND EXPENSES

MULTIPLE CHOICE

Question Nos. 11-16, 21, and 22 are ICMA adapted.

A **1.** **Short-range budgets must be considered in conjunction with long-range plans in order to:**
- **A. find the best short-range budget**
- **B. obtain systematic feedback**
- **C. predict the future**
- **D. coordinate risk and return evaluations**
- **E. eliminate risk**

C **2.** **The background for long-range plans is formed by all of the following items *except:***
- **A. population growth**
- **B. personal consumption expenditures**
- **C. precise future product costs**
- **D. indexes of industrial production**
- **E. economic factors and market trends**

A **3.** **In setting profit objectives, management must consider all of the following items *except:***
- **A. indexes of industrial production**
- **B. sales volume required to meet all costs, dividends, and retained earnings requirements**
- **C. sales volume attainable in the present plant**
- **D. the break-even point**
- **E. profit or loss for given sales volume levels**

A **4.** **The procedure for setting profit objectives in which management specifies a given rate of return that it seeks to realize in the long run by means of planning toward that end is the:**
- **A. *a priori* method**
- **B. *ad hoc* method**
- **C. pragmatic method**
- **D. theoretical method**
- **E. *a posteriori* method**

C 5. Social impacts on the management planning process include all of the following *except:*
- **A. nonrenewable resource consumption**
- **B. public safety**
- **C. income taxation**
- **D. impact of company products on health**
- **E. environmental pollution**

E 6. A budget that contains summaries of the sales, manufacturing, and expense budgets is a:
- **A. budgeted cost of goods manufactured and sold statement**
- **B. sales budget**
- **C. production budget**
- **D. factory overhead budget**
- **E. budgeted income statement**

C 7. The principal functions of the budget committee include all of the following *except:*
- **A. reviewing individual budget estimates**
- **B. deciding on general policies**
- **C. enforcing budgeted standards**
- **D. analyzing budget reports**
- **E. suggesting revisions to budget estimates**

D 8. In planning for future sales, the type of data most likely to be found in trade association publications—or from the trade associations themselves—would be the:
- **A. unemployment rate**
- **B. general economic conditions**
- **C. company's potential market share**
- **D. industry's volume of sales**
- **E. company's past sales by product line**

C 9. A company that has inventory on hand at the beginning of a budget period and that has determined its desired sales and ending inventory levels uses the following formula to figure the amount of production required:
- **A. Production = Beginning Inventory + Ending Inventory - Sales**
- **B. Production = Sales - Beginning Inventory - Ending Inventory**
- **C. Production = Sales - Beginning Inventory + Ending Inventory**
- **D. Production = Sales - Beginning Inventory**
- **E. Production = Sales + Beginning Inventory - Ending Inventory**

E 10. For budget purposes, the most useful cost classification method is the:
- **A. significant variance system**
- **B. dollar value classification**
- **C. variability classification**
- **D. natural classification**
- **E. departmental classification**

E 11. The goals and objectives upon which an annual profit plan is based should be limited to:
- **A. financial measures, such as net income, return on investment, and earnings per share**
- **B. quantitative measures, such as growth in unit sales, number of employees, and manufacturing capacity**
- **C. qualitative measures of organizational activity, such as product innovation leadership, product quality levels, and product safety**
- **D. the financial and quantitative measures**
- **E. a combination of financial, quantitative, and qualitative measures**

B 12. The primary role of the budget committee is to:
- **A. justify the budget to the executive committee of the board of directors**
- **B. decide on general policies, compile the budget, and manage the budget process**
- **C. force the final profit plan to conform to top-management goals**
- **D. settle disputes among operating executives during the development of the annual operating plan**
- **E. develop the annual profit plan by selecting the alternatives to be adopted from the suggestions submitted by the various operating segments**

E 13. When an organization prepares a forecast, it:
- **A. consolidates the plans of the separate requests into one overall plan**
- **B. presents the plan for a range of activity so that the plan can be adjusted for changes in activity levels**
- **C. classifies budget requests by activity and estimates the benefits arising from each activity**
- **D. divides the activities of individual responsibility centers into a series of packages that are ranked ordinally**
- **E. presents a statement of expectations for a period of time but does not present a firm commitment**

D 14. A distinction between forecasting and planning:
- **A. is that forecasting relies exclusively on statistical techniques while planning does not**
- **B. is not valid because they are synonymous**
- **C. arises because they are based upon different assumptions about economic events**
- **D. is that a plan can be prepared on the basis of a forecast**
- **E. is that forecasting is a management activity while planning is a technical activity**

C 15. A continuous budget:
- **A. is used only in process manufacturing companies**
- **B. works best for a company that can reliably forecast events a year or more into the future**
- **C. is a plan that is revised monthly or quarterly**
- **D. is an annual plan that is part of a five-year plan**
- **E. is a plan devised by a full-time planning staff**

B 16. **Ying Company plans to sell 200,000 units of finished product in October and anticipates a growth rate in sales of 5% per month. The desired monthly ending inventory in units of finished product is 80% of the next month's estimated sales. There are 150,000 finished units in the inventory on September 30.**

Ying's production requirement in units of finished product for the three-month period ending December 31 is:

A. 664,000
B. 665,720
C. 630,000
D. 712,025
E. none of the above

SUPPORTING CALCULATION:

Production = Sales + Ending inventory - Beginning inventory
$[200{,}000 + (200{,}000 \times 1.05) + (200{,}000 \times 1.05^2)] + (200{,}000 \times 1.05^3 \times .8) - 150{,}000$
= 665,720

E 17. **In setting profit objectives, management needs to consider:**

A. return on capital employed
B. profit or loss resulting from a given volume of sales
C. sales volume that the present operating capacity can produce
D. operating capacity necessary to attain the profit objectives
E. all of the above

C 18. **All of the following have been found to be good motivators for a company's personnel *except:***

A. a system of employee support through coaching, counseling, and career planning
B. a system that not only considers company objectives, but also employees' skills and capacities
C. a pay incentive system based on increased productivity
D. a system of communication that allows employees to query their superiors with trust and honest communication
E. a system of promotion that generates and sustains employee faith in its validity and judgment

A 19. **The plan that serves as a check on the accuracy of all other budgets is the:**

A. budgeted balance sheet
B. treasurer's budget
C. sales budget
D. credit rating budget
E. forecast cash flow statement

E 20. **If estimated sales and ending inventory in units are 50,000 and 12,000, respectively; and the amount of required production is 54,000 units, the beginning inventory in units would be:**

A. 2,000
B. 0
C. 16,000
D. 4,000
E. none of the above

SUPPORTING CALCULATION:

Production = Sales + Ending inventory - Beginning inventory
54,000 = 50,000 + 12,000 - 8,000

C 21. The Husker Company's sales budget shows quarterly sales for the next year as follows:

Quarter 1	**10,000 units**
Quarter 2	**8,000 units**
Quarter 3	**12,000 units**
Quarter 4	**14,000 units**

Company policy is to have a finished goods inventory at the end of each quarter equal to 20% of the next quarter's sales. Budgeted production for the second quarter of the next year would be:

A. 7,200 units
B. 8,000 units
C. 8,800 units
D. 8,400 units
E. some amount other than those given above

SUPPORTING CALCULATION:

Sales + Ending inventory - Beginning inventory = Production
8,000 + (.2 x 12,000) - (.2 x 8,000) = 8,800

A 22. The Erica Corporation's budget calls for the following production:

Quarter 1	**45,000 units**
Quarter 2	**38,000 units**
Quarter 3	**34,000 units**
Quarter 4	**48,000 units**

Each unit of product requires three pounds of direct material. The company's policy is to begin each quarter with an inventory of direct materials equal to 30% of that quarter's direct material requirements. Budgeted direct materials purchases for the third quarter would be:

A. 114,600 pounds
B. 89,400 pounds
C. 38,200 pounds
D. 29,800 pounds
E. some amount other than those given

SUPPORTING CALCULATION:

Production + Ending inventory - Beginning inventory = Purchases
(34,000 x 3) + (.3 x 48,000 x 3) - (.3 x 34,000 x 3) = 114,600

E 23. A company's profit plan consists of:
- **A. a detailed operating budget**
- **B. long- and short-range income statements**
- **C. balance sheets**
- **D. cash budgets**
- **E. all of the above**

E 24. The procedure for setting profit objectives in which the determination of profit objectives is subordinated to the planning, and the objectives emerge as the product of the planning itself is the:
- **A. *a priori* method**
- **B. practical method**
- **C. pragmatic method**
- **D. theoretical method**
- **E. *a posteriori* method**

C 25. The procedure for setting profit objectives in which management uses a profit standard that has been empirically tested and sanctioned by experience is the:
- **A. *a priori* method**
- **B. practical method**
- **C. pragmatic method**
- **D. theoretical method**
- **E. *a posteriori* method**

PROBLEMS

PROBLEM

1.

Production, Inventory, and Working Capital Requirements. Pronto Products prepares a budget forecast of its needs for the coming year. The current year's data and estimates for the coming year are presented below for the three styles of electric can openers sold by the company.

	Unit	Current Year		Next Year's
Can Opener	Price	Sales	Ending Inv.	Sales Estimates
Quick-Lid	$40	8,000 units	1,200 units	20,000 units
Easy-Open	30	10,000	1,500	26,000
Pry-Off	20	12,000	1,800	30,000

Next year's estimates are prepared by salespeople who management believes are very optimistic. Therefore, predictions of sales levels should be reduced by 25% to be realistic. In addition, the company requires an ending inventory equal to 10% of sales.

Required:

(1) Compute predicted unit sales for each type of can opener and the production required to provide for sales and inventory needs.
(2) Compute the dollar revenues expected to be obtained for each can opener.
(3) Compute the working capital required if the cost to produce each can opener is 55% of the sales price and if the company requires working capital equal to 15% of total production cost. (Show computations and round to the nearest dollar.)

SOLUTION

(1)

Can Opener	Predicted Unit Sales	Less Beginning Inventory	Plus Ending Inventory	Production Required
Quick-Lid	15,000 (20,000 x .75)	1,200	1,500	15,300
Easy-Open	19,500 (26,000 x .75)	1,500	1,950	19,950
Pry-Off	22,500 (30,000 x .75)	1,800	2,250	22,950

(2)

Can Opener	Unit Sales	Unit Price	Total Sales
Quick-Lid	15,000	$40	$ 600,000
Easy-Open	19,500	30	585,000
Pry-Off	22,500	20	450,000
			$ 1,635,000

(3)

Can Opener	Units Produced	Production Cost (55% x Unit Sales Price x Units Required)
Quick-Lid	15,300	$336,600
Easy-Open	19,950	329,175
Pry-Off	22,950	252,450
Total production cost		$918,225

15% x $918,225 = $137,734 working capital required

PROBLEM

2.
Sales and Production Budgets; Labor Requirements. Farkel Fabricators is in the process of preparing its budget for the coming year. The following data are provided:

Beginning inventory	15,000	units
Estimated sales	175,000	units
Desired ending inventory	20,000	units
Estimated production losses due to spoilage	5,000	units
Units produced per direct labor hour	5	units

Each employee works a total of 2,000 hours per year. A supervisor is required for every five employees. Since fractional employees and supervisors are not available, the number of employees and supervisors to be employed must always be rounded to the next highest number whenever it is a fraction.

Each unit will yield a revenue of $5, while each unit produced (including spoiled units) costs $1.50.

Required:

(1) Prepare the production budget in units for the coming year.
(2) Determine the number of direct labor employees and supervisors required for the coming year. (Show supporting computations.)

SOLUTION

(1)

Production for:	
Current sales	175,000
Spoiled goods	5,000
Ending inventory	20,000
Total units required	200,000
Provided by beginning inventory	(15,000)
Current production	185,000

(2)

Production required/Units per employee hour = Employee hours required
185,000/5 = 37,000

Employee hours required/Annual hours per employee = Direct labor employees required
37,000/2,000 = 18.5 or 19 employees

Employees/Ratio of employees to supervisors = Supervisors required
19/5 = 3.8 or 4 supervisors

PROBLEM

3.
Sales Forecast; Budgeted Income Statement. The management of Podunk Pottery Co. would like to earn 20% on its invested capital of $4,000,000. The company estimates sales of 100,000 pots during the coming year ending December 31. Sales commissions are paid at the rate of 10% of the sales price. Other expenses are as follows:

Variable manufacturing expenses	**30% of sales**
Fixed manufacturing expenses	**$ 100,000**
Fixed general and administrative expenses	**$ 25,000**

Required:

(1) Compute the dollar amount of target net income.
(2) Prepare a budgeted income statement for the coming year.

SOLUTION

(1) The net income must equal 20% of $4,000,000, or $800,000.

(2)

Podunk Pottery Company
Budgeted Income Statement
For Year Ending December 31, 19--

Sales		**$ 1,541,667**
Less cost of goods sold:		
Variable manufacturing expenses	**$ 462,500**	
Fixed manufacturing expenses	**100,000**	**562,500**
Gross profit		**$ 979,167**
Sales commissions	**$ 154,167**	
Fixed general and administrative expenses	**25,000**	**179,167**
Net income		**$ 800,000**

PROBLEM

4.

Production, Materials and Manufacturing Budget. Dink Products Inc. prepared the following figures as a basis for its 19B budget:

Product	Expected Sales	Estimated Sales Price per Unit	Required Materials per Unit	
			X	Y
Bens	40,000 units	$ 9.00	2 lbs.	4 lbs.
Bimmer	20,000	12.00	4 lbs.	1 lb.

Estimated inventories at the beginning and desired quantities at the end of 19B are:

Material	Beginning	Ending	Purchase Price per Pound
X	5,000 lbs.	6,000 lbs.	$1.20
Y	6,000	7,500	.60

Product	Beginning	Ending	Direct Labor Hours Per 1,000 Units
Bens	3,000 units	2,500 units	150
Bimmer	1,000	2,000	375

The direct labor cost is budgeted at $16 per hour and variable factory overhead at $12 per hour of direct labor. Fixed factory overhead, estimated to be $120,000, is a joint cost and is not allocated to specific products in developing the manufacturing budget for internal management use.

Required:

(1) Prepare the production budget.
(2) Prepare the purchases budget.
(3) Prepare the manufacturing budget by product and in total.

SOLUTION

(1)	Bens	Bimmer
Units required to meet sales budget	40,000	20,000
Add desired ending inventories	2,500	2,000
Total units required	42,500	22,000
Less estimated beginning inventories	3,000	1,000
Planned production	39,500	21,000

(2)	Material X (in Pounds)	Material Y (in Pounds)
Bens	79,000	158,000
Bimmer	84,000	21,000
	163,000	179,000
Add desired ending inventories	6,000	7,500
	169,000	186,500
Less estimated beginning inventories	5,000	6,000
Budgeted quantities of materials purchased	164,000	180,500
Budgeted purchase price per pound	$ 1.20	$ .60
Budgeted dollar amounts of materials purchased	$ 196,800	$ 108,300

(3) Manufacturing Budget

	Bens	Bimmer	Total
Materials:			
X: 39,500 x 2 x $1.20	$ 94,800		$ 94,800
21,000 x 4 x $1.20		$ 100,800	100,800
Y: 39,500 x 4 x $ .60	94,800		94,800
21,000 x 1 x $ .60		12,600	12,600
	$ 189,600	$ 113,400	$ 303,000
Direct labor:			
39.5 x 150 x $16	$ 94,800		$ 94,800
21 x 375 x 16		$ 126,000	126,000
	$ 94,800	$ 126,000	$ 220,800
Factory overhead—variable:			
39.5 x 150 x $12	$ 71,100		$ 71,100
21 x 375 x $12		$ 94,500	94,500
	$ 71,100	$ 94,500	$ 165,600
Total variable manufacturing cost	$ 355,500	$ 333,900	$ 689,400
Fixed manufacturing cost			120,000
Total manufacturing cost			$ 809,400

PROBLEM

5.

Projected Income Statement and Balance Sheet. The 19B forecast for Elenko Company appears below in the form of a prospective trial balance:

Elenko Co.
Prospective Trial Balance
December 31, 19B

Cash	**5,000**	
Accounts receivable	**15,000**	
Inventory (1/1/19B, 30,000 units)	**6,000**	
Plant and equipment	**200,000**	
Accumulated depreciation		**20,000**
Accounts payable		**10,000**
Notes payable (due in 5 yrs.)		**30,000**
Common stock		**50,000**
Retained earnings		**48,000**
Sales		**200,000**
Materials	**10,000**	
Direct labor	**20,000**	
Variable factory overhead	**15,000**	
Fixed factory overhead	**25,000**	
Marketing expenses	**30,000**	
General and administrative expenses	**18,000**	
Income tax payable	**?**	
Dividends	**14,000**	
	358,000	**358,000**

Adjustments for the change in inventory and for income tax (at 30%) have not been made. The scheduled production for 19B is 280,000 units, while the sales volume will reach 300,000 units. A full-cost first-in, first-out inventory system is used.

Required:

(1) Prepare a prospective statement of income and retained earnings for 19B, including the computation of the cost of the ending inventory.
(2) Prepare a prospective balance sheet for 19B.

SOLUTION

(1)

Elenko Co.
Prospective Statement of Income and Retained Earnings
For Year Ending December 31, 19B

Revenue:		
Sales		**$ 200,000**
Expenses:		
Cost of goods manufactured and sold:		
Materials	**$ 10,000**	
Direct labor	**20,000**	
Variable factory overhead	**15,000**	
Fixed factory overhead	**25,000**	
	$ 70,000	
Beginning inventory	**6,000**	
	$ 76,000	
Ending inventory	**2,500[1]**	**73,500**
Gross profit		**$ 126,500**
Marketing expenses	**$ 30,000**	
General and administrative expenses	**18,000**	**48,000**
Income before income tax		**$ 78,500**
Income tax (30%)		**23,550**
Net income		**$ 54,950**
Beginning retained earnings		**48,000**
		$ 102,950
Less dividends		**14,000**
Ending retained earnings		**$ 88,950**

[1]Inventory:

Units:	
Beginning inventory	**30,000**
Deducted from inventory	**20,000**
Ending inventory	**10,000**

Cost:

Cost per unit: $70,000 manufacturing cost/280,000 units = $.25
Cost of ending inventory: 10,000 units x $.25 = $2,500

(2)

Elenko Co.
Prospective Balance Sheet
December 31, 19B

Assets		
Current assets:		
Cash	**$ 5,000**	
Accounts receivable	**15,000**	
Inventory	**2,500**	**$ 22,500**
Plant and equipment	**$ 200,000**	
Less accumulated depreciation	**20,000**	**180,000**
Total assets		**$ 202,500**
Liabilities and Shareholders' Equity		
Current liabilities:		
Accounts payable	**$ 10,000**	
Income tax payable	**10,350**	**$ 20,350**
Long-term liabilities:		
Notes payable		**30,000**
Shareholders' equity:		
Common stock		**50,000**
Retained earnings		**102,150**
Total liabilities and shareholders' equity		**$ 202,500**

PROBLEM

6.

Budgeted Cost of Goods Manufactured and Sold Statement. WKRP, Inc., with $50,000,000 of par stock outstanding, plans to budget earnings of 10%, before income tax, on this stock. The Marketing Department budgets sales at $40,000,000. The budget director approves the sales budget and expenses as follows:

Marketing	**20% of sales**
Administrative	**10%**

Labor is expected to be 50% of the total manufacturing cost; materials issued for the budgeted production will cost $12,500,000; therefore, any savings in manufacturing cost will have to be in factory overhead. Inventories are to be as follows:

	Beginning of Year	End of Year
Finished goods	**$8,000,000**	**$10,000,000**
Work in process	**1,000,000**	**3,000,000**
Materials	**5,000,000**	**4,000,000**

Required: **Prepare the budgeted cost of goods manufactured and sold statement, showing the budgeted purchases of materials and the adjustments for inventories of materials, work in process, and finished goods.**

SOLUTION

WKRP, Inc.
Budgeted Cost of Goods Manufactured and Sold Statement
For Year Ending December 31, 19--

Materials:		
Beginning inventory	**$ 5,000,000**	
Purchases	**11,500,000[5]**	
Materials available for use	**$ 16,500,000**	
Less ending inventory	**4,000,000**	
Cost of materials used		**$ 12,500,000**
Labor		**13,500,000**
Factory overhead		**1,000,000[4]**
Total manufacturing cost		**$ 27,000,000[3]**
Add beginning work in process inventory		**1,000,000**
		$ 28,000,000
Deduct ending work in process inventory		**3,000,000**
Cost of goods manufactured		**$ 25,000,000[2]**
Add beginning finished goods inventory		**8,000,000**
Cost of goods available for sale		**$ 33,000,000**
Deduct ending finished goods inventory		**10,000,000**
Cost of goods sold		**$ 23,000,000[1]**

[1]Earnings (10% of $50,000,000 = 5,000,000)	**12.5**	**% of sales**
Marketing and administrative expenses	**30**	
	42.5	**% of sales**
Cost of goods sold ($23,000,000)	**57.5**	
	100	**% of sales**

[2]Cost of goods sold		**Ending finished goods inventory**		**Beginning finished goods inventory**		**Cost of goods manufactured**
$23,000,000	**+**	**$10,000,000**	**-**	**$8,000,000**	**=**	**$25,000,000**

[3]Costs of goods manufactured		**Ending work in process inventory**		**Beginning work in process inventory**		**Total manufacturing cost (materials, labor, and factory overhead)**
$25,000,000	**+**	**$3,000,000**	**-**	**$1,000,000**	**=**	**$27,000,000**

[4]Total manufacturing cost		**Labor (50% of manufacturing cost)**		**Cost of materials used**		**Factory overhead**
$27,000,000	**-**	**$13,500,000**	**-**	**$12,500,000**	**=**	**$1,000,000**

[5]Cost of materials used		**Ending materials inventory**		**Beginning materials inventory**		**Materials purchases**
$12,500,000	**+**	**$4,000,000**	**-**	**$5,000,000**	**=**	**$11,500,000**