

# CHAPTER 10

## Acquisition and Disposition of Property, Plant, and Equipment

### ANSWERS TO QUESTIONS

1. The major characteristics of plant assets are (1) that they are acquired for use in operations and not for resale, (2) that they are long-term in nature and usually subject to depreciation, and (3) that they have physical substance.

LO: 1, Bloom: K, Difficulty: Simple, Time: 3-5, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

2. The company should report the asset at its historical cost of \$450,000, not its current value. The main reasons for this position are (1) at the date of acquisition, cost reflects fair value; (2) historical cost involves actual, not hypothetical transactions, and as a result is extremely reliable; and (3) gains and losses should not be anticipated but should be recognized when the asset is sold.

LO: 1, Bloom: AP, Difficulty: Simple, Time: 3-5, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

3. (a) The acquisition costs of land may include the purchase or contract price, the broker's commission, title search and recording fees, assumed taxes or other liabilities, surveying, demolition (less salvage), and landscaping costs.  
  
(b) Machinery and equipment costs may properly include freight and handling, taxes on the purchase, insurance in transit, installation, and expenses of testing and breaking-in.  
  
(c) If a building is purchased, all repair charges, alterations, and improvements necessary to ready the building for its intended use should be included as a part of the acquisition cost. Building costs in addition to the amount paid to a contractor may include excavation, permits and licenses, architect's fees, interest accrued on funds obtained for construction purposes (during construction period only) called avoidable interest, insurance premiums applicable to the construction period, temporary buildings and structures, and property taxes levied on the building during the construction period.

LO: 1, Bloom: K, Difficulty: Simple, Time: 3-5, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

4. (a) Land.  
(b) Land.  
(c) Land.  
(d) Machinery. The only controversy centers on whether fixed overhead should be allocated as a cost to the machinery.  
(e) Land Improvements, should be depreciated.  
(f) Buildings.  
(g) Buildings, provided the benefits in terms of information justify the additional cost involved in providing the information.  
(h) Land.  
(i) Land.

LO: 1, Bloom: C, Difficulty: Simple, Time: 3-5, AACSB: None, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

5. (a) The position that no fixed overhead should be capitalized assumes that the construction of plant (fixed) assets will be timed so as not to interfere with normal operations. If this were not the case, the savings anticipated by constructing instead of purchasing plant assets would be nullified by reduced profits on the product that could have been manufactured and sold. Thus, construction of plant assets during periods of low activity will have a minimal effect on the total

amount of overhead costs. To capitalize a portion of fixed overhead as an element of the cost of constructed assets would, under these circumstances, reduce the amount assignable to operations and therefore overstate net income in the construction period and understate net income in subsequent periods because of increased depreciation charges.

**Questions Chapter 10 (Continued)**

- (b) Capitalizing overhead at the same rate as is charged to normal operations is defended by those who believe that all manufacturing overhead serves a dual purpose during plant asset construction periods. Any attempt to assign construction activities less overhead than the normal rate implies costing favors and results in the misstatement of the cost of both plant assets and finished goods.

LO: 1, Bloom: C, Difficulty: Simple, Time: 3-5, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

6. (a) Disagree. Organization and promotion expenses should be expensed.
- (b) Agree. Architect's fees for plans actually used in the construction of the building should be charged to the building account as part of the cost.
- (c) Agree. GAAP recommends that avoidable interest or actual interest cost, whichever is lower, be capitalized as part of the cost of acquiring an asset if a significant period of time is required to bring the asset to a condition or location necessary for its intended use. Interest costs are capitalized starting with the first expenditure related to the asset and capitalization would continue until the asset is substantially completed and ready for its intended use. Property taxes during construction should also be charged to the building account.
- (d) Disagree. Interest revenue is not considered part of the acquisition cost of the building and should be recorded as revenue.

LO: 1, 2, Bloom: C, Difficulty: Simple, Time: 3-5, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

7. Since the land for the plant site will be used in the operations of the firm, it is classified as property, plant, and equipment. The other tract is being held for speculation. It is classified as an investment.

LO: 1, Bloom: C, Difficulty: Simple, Time: 3-5, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

8. A common accounting justification is that all costs associated with the construction of an asset, including interest, should be capitalized in order that the costs can be matched to the revenues which the new asset will help generate.

LO: 2, Bloom: C, Difficulty: Simple, Time: 3-5, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

9. Assets that do not qualify for interest capitalization are (1) assets that are in use or ready for their intended use, and (2) assets that are not being used in the earnings activities of the firm.

LO: 2, Bloom: K, Difficulty: Simple, Time: 3-5, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

10. The avoidable interest is determined by multiplying (an) interest rate(s) by the weighted-average amount of accumulated expenditures on qualifying assets. For the portion of weighted-average accumulated expenditures which is less than or equal to any amounts borrowed specifically to finance construction of the assets, the capitalization rate is the specific interest rate incurred. For the portion of weighted-average accumulated expenditures which is greater than specific debt incurred, the interest rate is a weighted average of all other interest rates incurred.

The amount of interest to be capitalized is the avoidable interest, or the actual interest incurred, whichever is lower.

As indicated in the chapter, an alternative to the specific rate is to use an average borrowing rate.

LO: 2, Bloom: K, Difficulty: Simple, Time: 3-5, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

## Questions Chapter 10 (Continued)

11. The total interest cost incurred during the period should be disclosed, indicating the portion capitalized and the portion charged to expense.

Interest revenue from temporarily invested excess funds should not be offset against interest cost when determining the amount of interest to be capitalized. The interest revenue would be reported in the same manner customarily used to report any other interest revenue.

LO: 2, Bloom: K, Difficulty: Simple, Time: 3-5, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

12. (a) **Assets acquired by issuance of capital stock**—when property is acquired by issuance of common stock, the cost of the property is not measured by par or stated value of such stock. If the stock is actively traded on the market, then the market value of the stock is a fair indication of the cost of the property because the market value of the stock is a good measure of the current cash equivalent price. If the market value of the common stock is not determinable, then the market value of the property should be established and used as the basis for recording the asset and issuance of common stock.
- (b) **Assets acquired by gift or donation**—when assets are acquired in this manner a strict cost concept would dictate that the valuation of the asset be zero. However, in this situation, accountants record the asset at its fair value. The credit should be made to Contribution Revenue. Contributions received should be credited to revenue unless the contribution is from a governmental unit. Even in that case, we believe that the credit should be to Contribution Revenue.
- (c) **Cash discount**—when assets are purchased subject to a cash discount, the question of how the discount should be handled occurs. If the discount is taken, it should be considered a reduction in the asset cost. Different viewpoints exist, however, if the discount is not taken. One approach is that the discount must be considered a reduction in the cost of the asset. The rationale for this approach is that the terms of these discounts are so attractive that failure to take the discount must be considered a loss because management is inefficient. The other view is that failure to take the discount should not be considered a loss, because the terms may be unfavorable or the company might not be prudent to take the discount. Presently both methods are employed in practice. The former approach is conceptually correct.
- (d) **Deferred payments**—assets should be recorded at the present value of the consideration exchanged between contracting parties at the date of the transaction. In a deferred payment situation, there is an implicit (or explicit) interest cost involved, and the accountant should be careful not to include this amount in the cost of the asset.
- (e) **Lump sum or basket purchase**—sometimes a group of assets is acquired for a single lump sum. When a situation such as this exists, the accountant must allocate the total cost among the various assets on the basis of their relative fair value.
- (f) **Trade or exchange of assets**—when one asset is exchanged for another asset, the accountant is faced with several issues in determining the value of the new asset. The basic principle involved is to record the new asset at the fair value of the new asset or the fair value of what is given up to acquire the new asset, whichever is more clearly evident. However, the accountant must also be concerned with whether the exchange has commercial substance and whether monetary consideration is involved in the transaction. The commercial substance issue rests on whether the expected cash flows on the assets involved are significantly different. In addition, monetary consideration may affect the amount of gain recognized on the exchange under consideration.

LO: 3, 4, Bloom: C, Difficulty: Moderate, Time: 5-10, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

**Questions Chapter 10 (Continued)**

**13.** The cost of such assets includes the purchase price, freight and handling charges incurred, insurance on the equipment while in transit, cost of special foundations if required, assembly and installation costs, and costs of conducting trial runs. Costs thus include all expenditures incurred in acquiring the equipment and preparing it for use. When plant assets are purchased subject to cash discounts for prompt payment, the question of how the discount should be handled arises. The appropriate view is that the discount, whether taken or not, is considered a reduction in the cost of the asset. The rationale for this approach is that the real cost of the asset is the cash or cash equivalent price of the asset. Similarly, assets purchased on long-term payment plans should be accounted for at the present value of the consideration exchanged between the contracting parties at the date of the transaction.

LO: 3, Bloom: C, Difficulty: Moderate, Time: 3-5, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

$$14. \frac{\text{Fair value of land}}{\text{Fair value of building and land}} \times \text{Cost} = \text{Cost allocated to land}$$

$$\frac{\$500,000}{\$2,500,000} \times \$2,200,000 = \$440,000 \quad (\text{Cost allocated to land})$$

$$\frac{\text{Fair value of building}}{\text{Fair value of building and land}} \times \text{Cost} = \text{Cost allocated to building}$$

$$\frac{\$2,000,000}{\$2,500,000} \times \$2,200,000 = \$1,760,000 \quad (\text{Cost allocated to building})$$

LO: 3, Bloom: AP, Difficulty: Moderate, Time: 3-5, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**15.** \$10,000 (cash payment) + \$4,208 (present value of note) = \$14,208

LO: 3, Bloom: AP, Difficulty: Simple, Time: 3-5, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**16.** Ordinarily accounting for the exchange of nonmonetary assets should be based on the fair value of the asset given up or the fair value of the asset received, whichever is more clearly evident. Thus any gains and losses on the exchange should be recognized immediately. If the fair value of either asset is not reasonably determinable, the book value of the asset given up is usually used as the basis for recording the nonmonetary exchange. This approach is always employed when the exchange has commercial substance. The general rule is modified when exchanges lack commercial substance. In this case, the enterprise is not considered to have completed the earnings process and therefore a gain should not be recognized. However, a loss should be recognized immediately. In certain situations, gains on an exchange that lacks commercial substance may be recorded when monetary consideration is received. When monetary consideration is received, it is assumed that a portion of the earnings process is completed, and therefore, a partial gain is recognized.

LO: 3, Bloom: K, Difficulty: Moderate, Time: 5-7, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

**17.** In accordance with GAAP which requires losses to be recognized immediately, the entry should be:

Trucks (new).....	42,000	
Accumulated Depreciation.....	9,800*	
Loss on Disposal of Trucks.....	4,200**	
Trucks (old).....		30,000
Cash.....		26,000

$$*[(\$30,000 - \$6,000) \times 49 \text{ months} / 120 \text{ months} = \$9,800]$$

$$**(\text{Book value } \$30,000 - \$9,800) - \$16,000 \text{ trade-in} = \$4,200 \text{ loss})$$

LO: 3, Bloom: AP, Difficulty: Moderate, Time: 3-5, AACSB: None, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

18. Ordinarily such expenditures include (1) the recurring costs of servicing necessary to keep property in good operating condition, (2) cost of renewing structural parts of major plant units, and (3) costs of major overhauling operations which may or may not extend the life beyond original expectation.

The first class of expenditures represents the day-to-day service and in general is chargeable to operations as incurred. These expenditures should not be charged to the asset accounts.

The second class of expenditures may or may not affect the recorded cost of property. If the asset is rigidly defined as a distinct unit, the renewal of parts does not usually disturb the asset accounts; however, these costs may be capitalized and apportioned over several fiscal periods on some equitable basis. If the property is conceived in terms of structural elements subject to separate replacement, such expenditures should be charged to the plant asset accounts.

The third class of expenditures, major overhauls, is usually entered through the asset accounts because replacement of important structural elements is usually involved. Other than maintenance charges mentioned above are those expenditures which add some physical aspect not a part of the asset at the time of its original acquisition. These expenditures may be capitalized in the asset account.

An expenditure which extends the life but not the usefulness of the asset is often charged to the Accumulated Depreciation account. A more appropriate treatment requires retiring from the asset and accumulated depreciation accounts the appropriate amounts (original cost from the asset account) and to capitalize in the asset account the new cost. Often it is difficult to determine the original cost of the item being replaced. For this reason, the replacement or renewal is charged to the Accumulated Depreciation account.

LO: 4, Bloom: K, Difficulty: Simple, Time: 5-7, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

19. (a) **Additions.** Additions represent entirely new units or extensions and enlargements of old units. Expenditures for additions are capitalized by charging either old or new asset accounts depending on the nature of the addition.
- (b) **Major Repairs.** Expenditures to replace parts or otherwise to restore assets to their previously efficient operating condition are regarded as repairs. To be considered a major repair, several periods must benefit from the expenditure. The cost should be handled as an addition, improvement or replacement depending on the type of major repair made.
- (c) **Improvements.** An improvement does not add to existing plant assets. Expenditures for such betterments represent increases in the quality of existing plant assets by rearrangements in plant layout or the substitution of improved components for old components so that the facilities have increased productivity, greater capacity, or longer life. The cost of improvements is accounted for by charges to the appropriate property accounts, the elimination of the cost, and accumulated depreciation associated with the replaced components, if any.

**Replacements.** Replacements involve an “in kind” substitution of a new asset or part for an old asset or part. Accounting for major replacements requires entries to retire the old asset or part and to record the cost of the new asset or part. Minor replacements are treated as period costs.

LO: 4, Bloom: C, Difficulty: Moderate, Time: 5-7, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

## Questions Chapter 10 (Continued)

20. The cost of installing the machinery should be capitalized, but the extra month's wages paid to the dismissed employees should not, as this payment did not add any value to the machinery.

The extra wages should be charged off immediately as an expense; the wages could be shown as a separate item in the income statement for disclosure purposes.

LO: 4, Bloom: C, Difficulty: Moderate, Time: 3-5, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

21. (a) **Overhead of a business that builds its own equipment.** Some accountants have maintained that the equipment account should be charged only with the additional overhead caused by such construction. However, a more realistic figure for the cost of equipment results if the plant asset account is charged for overhead applied on the same basis and at the same rate as used for production.
- (b) **Cash discounts on purchases of equipment.** Some accountants treat all cash discounts as financial or other revenue, regardless of whether they arise from the payment of invoices for merchandise or plant assets. Others take the position that only the net amount paid for plant assets should be capitalized on the basis that the discount represents a reduction of price and is not income. The latter position seems more logical in light of the fact that plant assets are purchased for use and not for sale and that they are written off to expense over a long period of time.
- (c) **Interest paid during construction of a building.** GAAP requires that avoidable or actual interest cost, whichever is lower, be capitalized as part of the cost of acquiring an asset if a significant period of time is required to bring the asset to a condition and location necessary for its intended use.
- (d) **Cost of a safety device installed on a machine.** This is an addition to the machine and should be capitalized in the machinery account if material.
- (e) **Freight on equipment returned before installation,** for replacement by other equipment of greater capacity. If ordering the first equipment was an error, whether due to judgment or otherwise, the freight should be regarded as a loss. However, if information became available after the order was placed which indicated purchase of the new equipment was more advantageous, the cost of the return freight may be viewed as a necessary cost of the new equipment.
- (f) **Cost of moving machinery to a new location.** Normally, only the cost of one installation should be capitalized for any piece of equipment. Thus, the original installation and any accumulated depreciation relating thereto should be removed from the accounts and the new installation costs (i.e., cost of moving) should be capitalized. In cases where this is not possible and the cost of moving is substantial, it is capitalized and depreciated appropriately over the period during which it makes a contribution to operations.
- (g) **Cost of plywood partitions erected in the remodeling of the office.** This is a part of the remodeling cost and may be capitalized as part of the remodeling itself is of such a nature that it is an addition to the building and not merely a replacement or repair.
- (h) **Replastering of a section of the building.** This seems more in the nature of a repair than anything else and as such should be treated as an expense.
- (i) **Cost of a new motor for one of the trucks.** This probably extends the useful life of the truck. As such it may be viewed as an extraordinary repair and charged against the accumulated depreciation on the truck. The remaining service life of the truck should be estimated and the depreciation adjusted to write off the new book value, less salvage, over the remaining useful

life. A more appropriate treatment is to remove the cost of the old motor and related depreciation and add the cost of the new motor if possible.

LO: 1 2, Bloom: C, Difficulty: Moderate, Time: 5-10, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

**22.** This approach is not correct since at the very minimum the investor should be aware that certain assets are used in the business, which are not reflected in the main body of the financial statements. Either the company should keep these assets on the balance sheet or they should be recorded at salvage value and the resulting gain recognized. In either case, there should be a clear indication that these assets are fully depreciated, but are still being used in the business.

LO: 3, Bloom: K, Difficulty: Simple, Time: 3-5, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

**23.** Gains or losses on plant asset retirements should be shown in the income statement along with other items that arise from customary business activities-usually as other revenues and gains or other expenses and losses.

LO: 5, Bloom: K, Difficulty: Simple, Time: 3-5, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

\*24. The criteria for evaluating whether contributions are unconditional (and thus recognized immediately in income) or conditional (for which income recognition is deferred) depend on the terms of the gift or grant agreement. The focus is on whether a gift or grant agreement has the following terms.

- (1) specifies a "barrier or hurdle" that the recipient must overcome to be entitled to the resources. A barrier is the inclusion of a measurable performance requirement such as the degree of completion or specific output or outcome.
- (2) releases the donor from its obligation to transfer resources (or if assets are advanced, a right to demand their return) if the barrier or hurdle is not achieved.

An agreement that contains both is a conditional contribution. An agreement that omits one or both is unconditional.

LO: 6, Bloom: K, Difficulty: Simple, Time: 3-5, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

\*25. The distinction between a conditional and unconditional contribution is important from an accounting point of view because it affects when expense and revenue are reported. In an unconditional contribution revenue is recognized immediately whereas in a conditional contribution is deferred.

LO: 6, Bloom: C, Difficulty: Simple, Time: 3-5, AACSB: Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

# SOLUTIONS TO BRIEF EXERCISES

## BRIEF EXERCISE 10.1

$$\$27,000 + \$1,400 + \$10,200 = \underline{\underline{\$38,600}}$$

LO: 1, Bloom: AP, Difficulty: Simple, Time: 5-7, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

## BRIEF EXERCISE 10.2

Expenditures		Capitalization Period	Weighted-Average Accumulated Expenditures
Date	Amount	Period	Accumulated Expenditures
3/1	\$1,800,000	10/12	\$1,500,000
6/1	1,200,000	7/12	700,000
12/31	<u>3,000,000</u>	0	<u>0</u>
	<u>\$6,000,000</u>		<u>\$2,200,000</u>

LO: 2, Bloom: AP, Difficulty: Moderate, Time: 5-7, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

## BRIEF EXERCISE 10.3

	Principal		Interest
10%, 5-year note	\$2,000,000	X .10	\$200,000
11%, 4-year note	<u>3,500,000</u>	X.11	<u>385,000</u>
	<u>\$5,500,000</u>		<u>\$585,000</u>

$$\text{Weighted-average interest rate} = \frac{\$585,000}{\$5,500,000} = \underline{\underline{10.64\%}}$$

LO: 2, Bloom: AP, Difficulty: Moderate, Time: 3-5, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

## BRIEF EXERCISE 10.4

Weighted-Average Accumulated Expenditures	X	Interest Rate	=	Avoidable Interest
\$1,000,000		.12 X 10/12		\$100,000
<u>1,200,000</u>		.1064		<u>127,680</u>
<u>\$2,200,000</u>				<u>\$227,680</u>

LO: 2, Bloom: AP, Difficulty: Moderate, Time: 5-7, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None



### BRIEF EXERCISE 10.5

Trucks (\$80,000 X .68301 (PVF <sub>4, 10%</sub> )).....	54,641	
Discount on Notes Payable .....	25,359	
<b>Notes Payable.....</b>		<b>80,000</b>

LO: 3, Bloom: AP, Difficulty: Simple, Time: 5-7, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

### BRIEF EXERCISE 10.6

	<u>Fair Value</u>	<u>% of Total</u>		<u>Cost</u>	<u>Recorded Amount</u>
Land	\$ 60,000	60/360	X	\$315,000	\$ 52,500
Building	220,000	220/360	X	\$315,000	192,500
Equipment	80,000	80/360	X	\$315,000	70,000
	<u>\$360,000</u>				<u>\$315,000</u>

LO: 3, Bloom: AP, Difficulty: Simple, Time: 5-7, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

### BRIEF EXERCISE 10.7

Land (2,000 X \$40).....	80,000	
Common Stock (2,000 X \$10) .....		20,000
Paid-in Capital in Excess of Par—		
Common Stock [2,000 x (\$40 - \$10)] .....		60,000

LO: 3, Bloom: AP, Difficulty: Simple, Time: 5-7, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

### BRIEF EXERCISE 10.8

Equipment.....	3,300	
Accumulated Depreciation—Trucks .....	18,000	
Trucks .....		20,000
Cash .....		500
Gain on Disposal of Trucks*.....		800
*[((\$3,300 - \$500) - (\$20,000 - \$18,000)]		

LO: 3, Bloom: AP, Difficulty: Moderate, Time: 5-7, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

### BRIEF EXERCISE 10.9

Equipment (\$3,300 – \$800).....	2,500	
Accumulated Depreciation—Trucks .....	18,000	
Trucks .....		20,000
Cash .....		500

LO: 3, Bloom: AP, Difficulty: Moderate, Time: 5-7, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

### BRIEF EXERCISE 10.10

Equipment.....	5,000	
Accumulated Depreciation—Machinery .....	3,000	
Loss on Disposal of Machinery* .....	4,000	
Machinery .....		9,000
Cash .....		3,000

$$*[(\$5,000 - \$3,000) - (\$9,000 - \$3,000)]$$

LO: 3, Bloom: AP, Difficulty: Moderate, Time: 5-7, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

### BRIEF EXERCISE 10.11

Trucks (new) .....	37,000	
Accumulated Depreciation—Trucks .....	27,000	
Loss on Disposal of Trucks* .....	2,000	
Trucks (used).....		30,000
Cash .....		36,000

$$*[(\$37,000 - \$36,000) - (\$30,000 - \$27,000)]$$

LO: 3, Bloom: AP, Difficulty: Moderate, Time: 5-7, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

### BRIEF EXERCISE 10.12

Trucks (new) .....	35,000	
Accumulated Depreciation—Trucks .....	17,000	
Loss on Disposal of Trucks .....	1,000	
Trucks (used).....		20,000
Cash .....		33,000

$$*[(\$35,000 - \$33,000) - (\$20,000 - \$17,000)]$$

LO: 3, Bloom: AP, Difficulty: Moderate, Time: 5-7, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

### BRIEF EXERCISE 10.13

Only cost (c), which represents a maintenance charge that occurs regularly is expensed when incurred. It is a revenue expenditure. All other costs are capital expenditures.

LO: 4, Bloom: C, Difficulty: Moderate, Time: 3-5, AACSB: None, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

### BRIEF EXERCISE 10.14

(a)	Depreciation Expense (\$2,400 X 8/12) .....	1,600	
	Accumulated Depreciation—Machinery .....		1,600
(b)	Cash .....	10,500	
	Accumulated Depreciation—Machinery		
	(\$8,400 + \$1,600) .....	10,000	
	Machinery .....		20,000
	Gain on Disposal of Machinery** .....		500

\*[\$10,500 – (\$20,000 - \$10,000)]

LO: 5, Bloom: AP, Difficulty: Moderate, Time: 5-7, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

### BRIEF EXERCISE 10.15

(a)	Depreciation Expense (\$2,400 X 8/12) .....	1,600	
	Accumulated Depreciation—Machinery .....		1,600
(b)	Cash .....	5,200	
	Loss on Disposal of Machinery .....	4,800	
	Accumulated Depreciation—Machinery	10,000	
	(\$8,400 + \$1,600) .....		
	Machinery .....		20,000

LO: 5, Bloom: AP, Difficulty: Moderate,, Time: 5-7, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

### **\*BE10.16**

**This transaction should be considered an exchange transaction. This is an arrangement in which commensurate value is exchanged between two parties and it should follow the accounting for an exchange transaction.**

LO: 6, Bloom: AP, Difficulty: Simple, Time: 5-7, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

### **\*BE10.17**

**This transaction is a conditional contribution. The grant includes a measurable barrier (6,000 square feet) that must be achieved and a right of return of unused assets for unmet requirements.**

LO: 6, Bloom: AP, Difficulty: Simple, Time: 5-7, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

### **\*BE10.18**

**This grant is considered a nonexchange transaction accounted for under the contribution accounting model. The foundation does not receive direct commensurate value in exchange for the resources provided. University retains all rights to the research and findings; therefore, Knowledge University and the general public receive the primary benefits.**

LO: 6, Bloom: AP, Difficulty: Simple, Time: 5-7, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

# SOLUTIONS TO EXERCISES

## EXERCISE 10.1 (15–20 minutes)

Item	Land	Land Improvements	Building	Other Accounts
(a)				(\$275,000) Notes Payable
(b)			\$275,000	
(c)	\$ 8,000			
(d)	7,000			
(e)			6,000	
(f)			(1,000)	
(g)			22,000	
(h)	250,000			
(i)	9,000			
(j)		\$ 4,000		
(k)	11,000			
(l)	(5,000)			
(m)			13,000	
(n)		19,000		
(o)	14,000			
(p)			3,000	

LO: 1, Bloom: AP, Difficulty: Moderate, Time: 15-20, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

## EXERCISE 10.2 (10–15 minutes)

The allocation of costs would be as follows:

	Land	Building
Land	\$400,000	
Razing costs	42,000	
Salvage	(6,300)	
Legal fees	1,850	
Survey		\$ 2,200
Plans		68,000
Title insurance	1,500	
Liability insurance		900
Construction		2,740,000
Interest		170,000
	<b>\$439,050</b>	<b>\$2,981,100</b>

LO: 1, Bloom: AP, Difficulty: Moderate, Time: 10-15, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**EXERCISE 10.3 (10–15 minutes)**

1.	Trucks .....	13,900.00	
	Cash .....		13,900.00
2.	Trucks .....	14,727.26*	
	Discount on Notes Payable .....	1,272.74	
	Cash .....		2,000.00
	Notes Payable .....		14,000.00
	*PV of \$14,000 @ 10% for 1 year =		
	\$14,000 X .90909 = \$12,727.26		
	\$12,727.26 + \$2,000.00 = \$14,727.26		
3.	Trucks .....	15,200.00	
	Cost of Goods Sold .....	12,000.00	
	Inventory .....		12,000.00
	Sales Revenue .....		15,200.00

[Note to instructor: The selling (retail) price of the computer system appears to be a better gauge of the fair value of the consideration given than the list price of the truck as a gauge of the fair value of the consideration received (truck). Vehicles are often sold at a price below the list price.]

4.	Trucks .....	13,000.00*	
	Common Stock .....		**10,000.00
	Paid-in Capital in Excess of Par –		
	Common Stock .....		***3,000.00

\* (1,000 shares X \$13 = \$13,000)

\*\* (1,000 shares x \$10)

\*\*\* [1,000 shares x (\$13 - \$10)]

LO: 1, Bloom: AP, Difficulty: Moderate, Time: 10-15, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

## EXERCISE 10.4 (20–25 minutes)

### Purchase

Cash paid for equipment, including sales tax of \$5,000	\$105,000
Freight and insurance while in transit	2,000
Cost of moving equipment into place at factory	3,100
Wage cost for technicians to test equipment	4,000
Special plumbing fixtures required for new equipment	8,000
<b>Total cost</b>	<b><u>\$122,100</u></b>

The insurance premium of \$1,500 paid during the first year of operation of this equipment should be reported initially as prepaid insurance and then adjusted to insurance expense, and not be capitalized. Repair cost of \$1,300 incurred in the first year of operations related to this equipment should be reported as repair and maintenance expense, and not be capitalized. Both these costs relate to periods subsequent to purchase.

### Construction

Material and purchased parts (\$200,000 X .98)	\$196,000
Labor costs	190,000
Overhead costs	50,000
Cost of installing equipment	4,400
<b>Total cost</b>	<b><u>\$440,400</u></b>

Note that the cost of material and purchased parts is reduced by the amount of cash discount not taken ( $.02 \times \$200,000 = \$4,000$ ) because the equipment should be reported at its cash equivalent price. The imputed interest on funds used during construction related to stock financing of \$14,000 should not be capitalized or expensed. This item is an opportunity cost that is not reported.

Profit on self-construction of \$30,000 should not be reported. Profit should only be reported when the asset is sold.

LO: 1 Bloom: AP, Difficulty: Moderate, Time: 20-25, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

## EXERCISE 10.5 (30–40 minutes)

	Land	Buildings	M & E	Other	
Abstract fees	\$ 520				
Architect's fees		\$ 3,170			
Cash paid for land and old building	87,000				
Removal of old building (\$20,000 – \$5,500)	14,500				
Interest on loans during construction		7,400			
Excavation before construction		19,000			
Machinery purchased			\$53,900	\$1,100	—Misc. expense
Freight on machinery			1,340		(Discount Lost)
Storage charges caused by noncompletion of building				2,180	—Misc. expense (Loss)
New building		485,000			
Assessment by city	1,600				
Hauling charges—machinery				620	—Misc. expense
Installation—machinery			2,000		(Loss)
Landscaping	<u>5,400</u>				
	<u>\$109,020</u>	<u>\$514,570</u>	<u>\$57,240</u>	<u>\$3,900</u>	

LO: 1, 2, Bloom: AP, Difficulty: Moderate, Time: 30-40, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

## EXERCISE 10.6 (15–25 minutes)

1. Land <sup>a</sup> .....	131,250	
Buildings <sup>b</sup> .....	306,250	
Equipment <sup>c</sup> .....	262,500	
Cash .....		700,000

$$\$700,000 \times \frac{\$150,000}{\$800,000} = \$131,250^a \quad \text{Land}$$

$$\$700,000 \times \frac{\$350,000}{\$800,000} = \$306,250^b \quad \text{Buildings}$$

$$\$700,000 \times \frac{\$300,000}{\$800,000} = \$262,500^c \quad \text{Equipment}$$



## EXERCISE 10.6 (Continued)

2.	Equipment .....	25,000	
	Cash.....		2,000
	Note Payable .....		23,000
3.	Equipment .....	19,600	
	Accounts Payable (\$20,000 X .98).....		19,600
4.	Land .....	27,000	
	Contribution Revenue .....		27,000
5.	Buildings .....	600,000	
	Cash.....		600,000

LO: 1,3, Bloom: AP, Difficulty: Moderate, Time: 15-20, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

## EXERCISE 10.7 (20–25 minutes)

### (a)     Avoidable Interest

Weighted-Average Accumulated Expenditures	X	Interest Rate	=	Avoidable Interest
\$2,000,000		.12		\$240,000
<u>1,600,000</u>		.1042		<u>166,720</u>
<u>\$3,600,000</u>				<u>\$406,720</u>

Weighted-average interest rate computation	Principal		Interest
10% short-term loan	\$1,400,000	X .10	\$140,000
11% long-term loan	<u>1,000,000</u>	X .11	<u>110,000</u>
	<u>\$2,400,000</u>		<u>\$250,000</u>

$$\frac{\text{Total Interest}}{\text{Total Principal}} = \frac{\$250,000}{\$2,400,000} = 10.42\%$$

## EXERCISE 10.7 (Continued)

(b)	<u>Actual Interest</u>	
Construction loan	\$2,000,000 X .12 =	\$240,000
Short-term loan	\$1,400,000 X .10 =	140,000
Long-term loan	\$1,000,000 X .11 =	<u>110,000</u>
	Total	<u>\$490,000</u>

Because avoidable interest is lower than actual interest, use avoidable interest.

Cost	\$5,200,000
Interest capitalized	<u>406,720</u>
Total cost	<u>\$5,606,720</u>

$$\text{Depreciation Expense} = \frac{\$5,606,720 - \$300,000}{30 \text{ years}} = \$176,891$$

LO: 2, Bloom: AP, Difficulty: Difficult, Time: 20-25, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

## EXERCISE 10.8 (20–25 minutes)

### (a) Computation of Weighted-Average Accumulated Expenditures

<u>Expenditures</u>			<u>Capitalization</u>	=	<u>Weighted-Average</u>
<u>Date</u>	<u>Amount</u>	X	<u>Period</u>		<u>Accumulated Expenditures</u>
March 1	\$ 360,000		10/12		\$ 300,000
June 1	600,000		7/12		350,000
July 1	1,500,000		6/12		750,000
December 1	<u>1,500,000</u>		1/12		<u>125,000</u>
	<u>\$3,960,000</u>				<u>\$1,525,000</u>

### Computation of Avoidable Interest

<u>Weighted-Average</u>			=	<u>Avoidable Interest</u>
<u>Accumulated Expenditures</u>	X	<u>Interest Rate</u>		
\$1,525,000		.12 (Construction loan)		<u>\$183,000</u>

## EXERCISE 10.8 (Continued)

### Computation of Actual Interest

Actual interest		
\$3,000,000 X .12		\$ 360,000
\$4,000,000 X .13		520,000
\$1,600,000 X .10		160,000
		<u>\$1,040,000</u>

Note: Use avoidable interest for capitalization purposes because it is lower than actual.

(b) Buildings .....	183,000	
Interest Expense* .....	857,000	
Cash (\$360,000 + \$520,000 + \$160,000) .....		1,040,000

*Actual interest for year	\$1,040,000
Less: Amount capitalized	<u>183,000</u>
Interest expense debit	<u>\$ 857,000</u>

LO: 2, Bloom: AP, Difficulty: Moderate, Time: 20-25, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

## EXERCISE 10.9 (20–25 minutes)

### (a) Computation of Weighted-Average Accumulated Expenditures

Expenditures			Capitalization		Weighted-Average
Date	Amount	X	Period	=	Accumulated Expenditures
July 31	\$200,000		3/12		\$50,000
November 1	100,000		0		<u>0</u>
					<u>\$50,000*</u>



## EXERCISE 10.10 (20–25 minutes)

**Situation I. \$80,000**—The requirement is the amount Apolo Ohno should report as capitalized interest at 12/31/20. The amount of interest eligible for capitalization is

Weighted-Average Accumulated Expenditures X Interest Rate = Avoidable Interest

Since Apolo Ohno has outstanding debt incurred specifically for the construction project, in an amount greater than the weighted-average accumulated expenditures of \$800,000, the interest rate of 10% is used for capitalization purposes. Therefore, the avoidable interest is \$80,000, which is less than the actual interest.

$$\$800,000 \times .10 = \$80,000$$

Finally, per FASB ASC 835-20-30-1 the interest earned of \$250,000 is irrelevant to the question addressed in this problem because such interest earned on the unexpended portion of the loan is not to be offset against the amount eligible for capitalization.

**Situation II. \$39,000**—The requirement is total interest costs to be capitalized. GAAP identifies assets which qualify for interest capitalization: assets constructed for an enterprise's own use and assets intended for sale or lease that are produced as discrete projects. Inventories that are routinely produced in large quantities on a repetitive basis do not qualify for interest capitalization. Therefore, only \$30,000 and \$9,000 are capitalized.

## EXERCISE 10.10 (Continued)

**Situation III. \$385,000**—The requirement is to determine the amount of interest to be capitalized on the financial statements at April 30, 2021. The GAAP requirements are met: (1) expenditures for the asset have been made, (2) activities that are necessary to get the asset ready for its intended use are in progress, and (3) interest cost is being incurred. The amount to be capitalized is determined by applying an interest rate to the weighted-average amount of accumulated expenditures for the asset during the period. Because the \$7,000,000 of expenditures incurred for the year ended April 30, 2021, were incurred evenly throughout the year, the weighted-average amount of expenditures for the year is \$3,500,000, ( $\$7,000,000 \div 2$ ). Therefore, the amount of interest to be capitalized is \$385,000 ( $\$3,500,000 \times .11$ ). In any period, the total amount of interest cost to be capitalized shall not exceed the total amount of interest cost incurred by the enterprise. (Total interest is  $\$1,100,000 = \$10,000,000 \times .11$ ). Finally, the interest earned of \$650,000 is irrelevant to the question addressed in this problem because such interest earned on the unexpended portion of the loan is not to be offset against the amount eligible for capitalization.

LO: 2, Bloom: AP, Difficulty: Moderate, Time: 20-25, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**EXERCISE 10.11 (10–15 minutes)**

(a)	Equipment .....	10,000	
	Accounts Payable .....		10,000
	Accounts Payable .....	10,000	
	Equipment (\$10,000 X .02).....		200
	Cash.....		9,800
(b)	Equipment (new).....	9,900*	
	Loss on Disposal of Equipment.....	1,600**	
	Accumulated Depreciation—Equipment .....	6,000	
	Accounts Payable .....		9,500
	Equipment (old) .....		8,000
	 *Cost (\$9,500 + \$400)	 \$9,900	
	**Cost	\$8,000	
	Less: Accumulated depreciation***	<u>6,000</u>	
	Book value of equipment (old)	2,000	
	Less: Fair value of equipment (old)	<u>400</u>	
	Loss on disposal of equipment	<u>\$1,600</u>	
	 ***Cost – Book Value = (\$8,000 - \$2,000)		
	Accounts Payable .....	9,500	
	Cash.....		9,500
(c)	Equipment (\$10,800 X .91743 PV of 1 @ 9% for 1 year) .....	9,908	
	Discount on Note Payable (\$10,800 – \$9,908) ...	892	
	Note Payable .....		10,800
	Interest Expense .....	892	
	Note Payable .....	10,800	
	Discount on Note Payable.....		892
	Cash.....		10,800

LO: 1, 3, Bloom: AN, Difficulty: Moderate, Time: 10-15, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**EXERCISE 10.12 (15–20 minutes)**

(a)	Land .....	81,000	
	Contribution Revenue.....		81,000
(b)	Land* .....	180,000	
	Buildings* .....	630,000	
	Common Stock (\$50 X 13,000) .....		650,000
	Paid-in Capital in Excess of Par—Common Stock** .....		160,000

\*Since the market value of the stock is not determinable, the market value of the property is used as the basis for recording the asset and issuance of the stock.

\*\*[(\$180,000 + \$630,000) - \$650,000]

(c)	Machinery .....	40,100**	
	Materials .....		12,500
	Direct Labor.....		15,000
	Factory Overhead.....		12,600*
	*Fixed overhead applied     (.60 X \$15,000)	\$ 9,000	
	Additional overhead	2,700	
	Factory supplies used	<u>900</u>	
		<u>\$12,600</u>	

\*\*(\$12,500 + \$15,000 + \$12,600)

LO: 1, 3, Bloom: AP, Difficulty: Difficult, Time: 15-20, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None



**EXERCISE 10.13 (20–25 minutes)**

1.	Land .....	350,000	
	Building .....	1,050,000	
	Equipment .....	700,000	
	Common Stock (12,500 X \$100) .....		1,250,000
	Paid-in Capital in Excess of Par—Common Stock (\$2,100,000 – \$1,250,000) .....		850,000

The cost of the property, plant and equipment is \$2,100,000 (\$12,500 X \$168). This cost is allocated based on appraisal values as follows:

Land	$\frac{\$400,000}{\$2,400,000}$	X \$2,100,000 = \$350,000
Building	$\frac{\$1,200,000}{\$2,400,000}$	X \$2,100,000 = \$1,050,000
Equipment	$\frac{\$800,000}{\$2,400,000}$	X \$2,100,000 = \$700,000

2.	Buildings (\$105,000 plus \$161,000) .....	266,000	
	Equipment .....	135,000	
	Land Improvements .....	122,000	
	Land .....	18,000	
	Cash .....		541,000 <sup>d</sup>

<sup>d</sup>(\$266,000 + \$135,000 + \$122,000 + \$18,000)

3.	Equipment .....	265,300	
	Cash .....		265,300
	(\$10,500 plus \$254,800, which is 98% (1.00 - .02) of \$260,000.)		

LO: 1, 3, Bloom: AP, Difficulty: Moderate, Time: 20-25, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**EXERCISE 10.14 (15–20 minutes)**

(a)	Equipment .....	576,765*	
	Discount on Notes Payable .....	223,235**	
	Notes Payable .....		800,000

\*PV of \$160,000<sup>a</sup> ordinary annuity @ 12% for 5 years (\$160,000 X 3.60478) = \$576,765

\*\*(\$800,000 - \$576,765)

(b)	Interest Expense .....	69,212	
	Notes Payable .....	160,000	
	Discount on Notes Payable .....		69,212
	Cash.....		160,000

\*\*\*(.12 X \$576,765\*)

Year	Note Payment	12% Interest	Reduction of Principal	Balance
1/2/20				\$576,765*
12/31/20	\$160,000	\$69,212	\$ 90,788	485,977
12/31/21	160,000	58,317	101,683	384,294

(c)	Interest Expense .....	58,317	
	Notes Payable .....	160,000	
	Discount on Notes Payable .....		58,317
	Cash.....		160,000

(d)	Depreciation Expense.....	57,677	
	Accumulated Depreciation—Equipment ..		57,677
	(\$576,765* ÷ 10)		

LO: 3, Bloom: AP, Difficulty: Difficult, Time: 15-20, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

## EXERCISE 10.15 (15–20 minutes)

(a)	Equipment .....	86,861.85*	
	Discount on Notes Payable .....	18,138.15**	
	Cash.....		30,000.00
	Notes Payable (\$105,000 - \$30,000).....		75,000.00

\*PV of \$15,000 ordinary annuity

@ 10% for 5 years

(\$15,000 X 3.79079)                      \$56,861.85

Down payment                              30,000.00

Capitalized value of equipment        \$86,861.85

\*\* (\$105,000 - \$86,861.85)

(b)	Notes Payable .....	15,000.00	
	Interest Expense (see schedule).....	5,686.19	
	Cash.....		15,000.00
	Discount on Notes Payable.....		5,686.19

Year	Note Payment	10% Interest	Reduction of Principal	Balance
12/31/19				\$56,861.85
12/31/20	\$15,000.00 <sup>e</sup>	\$5,686.19 <sup>c</sup>	\$ 9,313.81	47,548.04
12/31/21	15,000.00 <sup>e</sup>	4,754.80 <sup>d</sup>	10,245.20	37,302.84

(c)	Notes Payable .....	15,000.00	
	Interest Expense (see schedule).....	4,754.80	
	Cash.....		15,000.00
	Discount on Notes Payable.....		4,754.80

LO: 3, Bloom: AP, Difficulty: Moderate, Time: 15-20, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**EXERCISE 10.16 (25–35 minutes)**

**Hayes Industries  
Acquisition of Assets 1 and 2**

**Use Appraised Values to break-out the lump-sum purchase**

Description	Appraisal	Percentage	Lump-Sum	Value on Books
Machinery	\$ 90,000	90/120	100,000	75,000
Equipment	<u>30,000</u>	30/120	100,000	25,000
	<u>\$120,000</u>			

Machinery .....	75,000	
Equipment .....	25,000	
Cash .....		100,000

**Acquisition of Asset 3**

**Use the cash price as a basis for recording the asset with a discount recorded on the note.**

Machinery .....	35,900	
Discount on Notes Payable (\$40,000 – \$35,900) .....	4,100	
Cash .....		10,000
Notes Payable .....		30,000

## EXERCISE 10.16 (Continued)

### Acquisition Asset 4

Since the exchange lacks commercial substance, a gain will be recognized in the proportion of cash received ( $\$10,000^f/\$80,000^e$ ) times the  $\$20,000^d$  gain (FMV of  $\$80,000$  minus BV of  $\$60,000$ ). The gain recognized will then be  $\$2,500^c$  with  $\$17,500$  of it being unrecognized and used to reduce the basis of the asset acquired.

Machinery ( $\$70,000 - \$17,500$ ) (New).....	52,500	
Accumulated Depreciation—Machinery.....	40,000	
Cash.....	10,000	
Machinery (Old).....		100,000
Gain on Disposal of Machinery.....		2,500

$$[(\$70,000 + \$10,000) - (\$100,000 - \$40,000)]$$

### Acquisition of Asset 5

In this case the equipment should be placed on Hayes's books at the fair market value of the stock. The difference between the stock's par value and its fair market value should be credited to Paid-in Capital in Excess of Par—Common Stock.

Equipment (100 shares $\times$ $\$11$ ).....	1,100	
Common Stock (100 shares $\times$ $\$8$ par).....		800
Paid-in Capital in Excess of Par—		
Common Stock [100 shares $\times$ ( $\$11 - \$8$ )].....		300

**EXERCISE 10.16 (Continued)**

**Construction of Building**

**Schedule of Weighted-Average Accumulated Expenditures**

<u>Date</u>	<u>Amount</u>	<u>Current Year Capitalization Period</u>	<u>Weighted-Average Accumulated Expenditures</u>
February 1	\$ 150,000	9/12	\$112,500
February 1	120,000	9/12	90,000
June 1	360,000	5/12	150,000
September 1	480,000	2/12	80,000
November 1	<u>100,000</u>	0/12	<u>0</u>
	<u>\$1,210,000</u>		<u>\$432,500</u>

Note that the capitalization is only 9 months in this problem.

**Avoidable Interest**

<u>Weighted-Average Accumulated Expenditures</u>		<u>Interest Rate</u>		<u>Avoidable Interest</u>
\$432,500	X	.12	=	\$51,900 <sup>a</sup>

The weighted expenditures are less than the amount of specific borrowing; the specific borrowing rate is used.

Land Cost            \$ 150,000<sup>b</sup>  
 Building Cost    \$ 1,111,900<sup>c</sup> [(\$120,000 + \$360,000 + \$480,000 + \$100,000) + \$51,900<sup>a</sup>]

Land .....	150,000	
Building.....	1,111,900	
Cash.....		1,210,000
Interest Expense .....		51,900

LO: 2, 3, Bloom: AP, Difficulty: Difficult, Time: 25-35, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**EXERCISE 10.17 (10–15 minutes)**

**Busytown Corporation**

Machinery (\$340 + \$85) .....	425	
Accumulated Depreciation – Machinery .....	140	
Loss on Disposal of Machinery .....	65*	
Machinery .....		290
Cash .....		340

**\*Computation of loss:**

Book value of old machine (\$290 – \$140)	\$150
Less: Fair value of old machine	<u>85</u>
Loss on disposal of machinery	<u>\$ 65</u>

**Dick Tracy Business Machine Company**

Cash .....	340	
Inventory .....	85	
Cost of Goods Sold .....	270	
Sales Revenue .....		425
Inventory .....		270

LO: 3, Bloom: AP, Difficulty: Difficult, Time: 10-15, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**EXERCISE 10.18 (20–25 minutes)**

(a) Exchange has commercial substance:

Depreciation Expense.....	700	
Accumulated Depreciation—Equipment .....		700
(\$11,200 – \$700 = \$10,500;		
\$10,500 ÷ 5 = \$2,100;		
\$2,100 X 4/12 = \$700)		
Equipment .....	15,200**	
Accumulated Depreciation—Equipment .....	7,000	
Gain on Disposal of Equipment .....		1,000*
Equipment .....		11,200
Cash.....		10,000

*Cost of old asset	\$11,200
Less: Accumulated depreciation	
(\$6,300 + \$700)	<u>7,000</u>
Book value of equipment (old)	4,200
Less: Fair value of old asset	<u>(5,200)</u>
Gain on disposal of equipment	<u>\$ 1,000</u>

**Cash paid	\$10,000
Fair value of old asset	<u>5,200</u>
Cost of new asset	<u>\$15,200</u>



## EXERCISE 10.18 (Continued)

(b) Exchange lacks commercial substance:

Depreciation Expense.....	700	
Accumulated Depreciation—Equipment .....		700
(\$11,200 - \$700 = \$10,500; \$10,500 ÷ 5 = \$2,100; \$2,100 x 4/12 = \$700)		
Equipment .....	15,200**	
Accumulated Depreciation—Equipment .....	7,000	
Gain on Disposal of Equipment.....		1,000*
Equipment .....		11,200
Cash.....		10,000

**Cash paid	\$10,000
Fair value of old asset	<u>5,200</u>
Cost of new asset	<u>\$15,200</u>

*Cost of old asset	\$11,200
Less: Accumulated depreciation	
(\$6,300 + \$700)	<u>7,000</u>
Book value of equipment (old)	4,200
Less: Fair value of old asset	<u>(5,200)</u>
Gain on disposal of equipment	<u>\$ 1,000</u>

**Note that the entries are the same for both (a) and (b). Gain is not deferred because cash boot is greater than 25% of the total amount given up, which makes the transaction monetary in nature.**

LO: 3, Bloom: AP, Difficulty: Difficult, Time: 20-25, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**EXERCISE 10.19 (15–20 minutes)**

**(a) Exchange lacks commercial substance.**

**Arruza Company:**

Equipment.....	12,000*	
Accumulated Depreciation—Equipment.....	19,000	
Equipment.....		28,000
Cash .....		3,000

**\*Valuation of equipment**

Book value of equipment given up	\$ 9,000 <sup>a</sup>	(\$28,000 - \$19,000)
Fair value of boot given up	<u>3,000</u>	
New equipment	<u>\$12,000</u>	

OR

Fair value received	\$15,500	
Less: Gain deferred	<u>3,500*</u>	
New equipment	<u>\$12,000</u>	

**Fair value of old equipment	\$12,500	
Less: Book value of old equipment	<u>9,000<sup>a</sup></u>	
Gain on disposal	<u>\$ 3,500</u>	

**Note:** Cash paid is less than 25% of the total amount given up, the transaction is nonmonetary, so the gain is deferred.

**Lo Bianco Company:**

Cash .....	3,000	
Equipment.....	12,500	
Accumulated Depreciation—Equipment.....	10,000	
Loss on Disposal of Equipment .....	2,500***	
Equipment.....		28,000

**\*\*\*Computation of loss:**

Book value of old equipment	\$18,000	(\$28,000 - \$10,000)
Less: Fair value of old equipment	<u>15,500</u>	
Loss on disposal of equipment	<u>\$ 2,500</u>	

## EXERCISE 10.19 (Continued)

### (b) Exchange has commercial substance

<u>Arruza Company</u>		
Equipment .....	15,500*	
Accumulated Depreciation—Equipment .....	19,000	
Equipment .....		28,000
Cash .....		3,000
Gain on Disposal of Equipment .....		3,500**

#### \*Cost of new equipment:

Cash paid	\$ 3,000
Fair value of old equipment	<u>12,500</u>
Cost of new equipment	<u>\$15,500</u>

#### \*\*Computation of gain on disposal of equipment:

Fair value of old equipment	\$12,500
Less: Book value of old equipment	
(\$28,000 – \$19,000)	<u>9,000</u>
Gain on disposal of equipment	<u>\$ 3,500</u>

<u>LoBianco Company</u>		
Cash .....	3,000	
Equipment .....	12,500*	
Accumulated Depreciation—Equipment (Old) .....	10,000	
Loss on Disposal of Equipment .....	2,500**	
Equipment .....		28,000

#### \*Cost of new equipment:

Fair value of equipment	\$15,500
Less: Cash received	<u>3,000</u>
Cost of new equipment	<u>\$12,500</u>

#### \*\*Computation of loss on disposal of equipment:

Book value of old equipment	
(\$28,000 – \$10,000)	\$18,000
Less: Fair value of equipment (Old)	<u>15,500</u>
Loss on disposal of equipment	<u>\$ 2,500</u>

LO: 3, Bloom: AP, Difficulty: Difficult, Time: 15-20, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**EXERCISE 10.20 (15–20 minutes)**

**(a) Exchange has commercial substance**

Equipment .....	56,900*	
Accumulated Depreciation—Equipment .....	20,000	
Gain on Disposal of Equipment .....		5,800**
Equipment .....		62,000
Cash .....		9,100

**\*Valuation of equipment**

Cash	\$ 8,000
Installation cost	1,100
Market value of used equipment	<u>47,800</u>
Cost of new equipment	<u>\$56,900</u>

**\*\*Computation of gain**

Fair value of old asset		\$47,800
Cost of old asset	\$62,000	
Less: Accumulated depreciation	<u>20,000<sup>a</sup></u>	
Book value of old asset		<u>(42,000)</u>
Gain on disposal of equipment		<u>\$ 5,800</u>

<sup>a</sup>Cost – Book Value = (\$62,000 - \$42,000)

**(b) Fair value information not determinable**

Equipment .....	51,100*	
Accumulated Depreciation—Equipment .....	20,000	
Equipment .....		62,000
Cash .....		9,100

**\*Basis of new equipment**

Book value of old equipment	\$42,000
Cash paid (including installation costs)	<u>9,100</u>
Basis of new equipment	<u>\$51,100</u>

LO: 3, Bloom: AP, Difficulty: Difficult, Time: 15-20, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

## EXERCISE 10.21 (20–25 minutes)

- (a) Any addition to plant assets is capitalized because a new asset has been created. This addition increases the service potential of the plant.
- (b) Expenditures that do not increase the service benefits of the asset are expensed. Painting costs are considered ordinary repairs because they maintain the existing condition of the asset or restore it to normal operating efficiency.
- (c) The approach to follow is to remove the old book value of the roof and substitute the cost of the new roof. It is assumed that the expenditure increases the future service potential of the asset.
- (d) Conceptually, the book value of the old electrical system should be removed. However, practically it is often difficult if not impossible to determine this amount. In this case, one of two approaches is followed. One approach is to capitalize the replacement on the theory that sufficient depreciation was taken on the old system to reduce the carrying amount to almost zero. A second approach is to debit accumulated depreciation on the theory that the replacement extends the useful life of the asset and thereby recaptures some or all of the past depreciation. In our present situation, the problem specifically states that the useful life is not extended and therefore debiting Accumulated Depreciation is inappropriate. Thus, this expenditure should be added to the cost of the plant facility.
- (e) See discussion in (d) above. In this case, because the useful life of the asset has increased, a debit to Accumulated Depreciation would appear to be the most appropriate.

LO: 4, Bloom: AP, Difficulty: Moderate, Time: 20-25, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**EXERCISE 10.22 (15–20 minutes)**

<b>1/30</b>	<b>Accumulated Depreciation—Buildings .....</b>	<b>112,200*</b>	
	<b>Loss on Disposal of Buildings .....</b>	<b>24,900**</b>	
	<b>Buildings .....</b>		<b>132,000</b>
	<b>Cash .....</b>		<b>5,100</b>

**\*(.5 X \$132,000 = \$6,600; \$6,600 X 17 = \$112,200)**

**\*\*(\$132,000 – \$112,200) + \$5,100**

<b>3/10</b>	<b>Cash (\$2,900 – \$300) .....</b>	<b>2,600</b>	
	<b>Accumulated Depreciation—Machinery .....</b>	<b>11,200*</b>	
	<b>Loss on Disposal of Machinery .....</b>	<b>2,200**</b>	
	<b>Machinery .....</b>		<b>16,000</b>

**\*(.10 X \$16,000 = \$1,600; \$1,600 X 7 = \$11,200)**

**\*\*(\$16,000 – \$11,200) + \$300 – \$2,900**

<b>3/20</b>	<b>Machinery .....</b>	<b>2,000</b>	
	<b>Cash .....</b>		<b>2,000</b>

<b>5/18</b>	<b>Machinery .....</b>	<b>5,500</b>	
	<b>Accumulated Depreciation—Machinery .....</b>	<b>2,100*</b>	
	<b>Loss on Disposal of Machinery .....</b>	<b>1,400**</b>	
	<b>Machinery .....</b>		<b>3,500</b>
	<b>Cash .....</b>		<b>5,500</b>

**\*(.10 X \$3,500 = \$350; \$350 X 6 = \$2,100)**

**\*\*(\$3,500 – \$2,100)**

<b>6/23</b>	<b>Maintenance and Repairs Expense .....</b>	<b>6,900</b>	
	<b>Cash .....</b>		<b>6,900</b>

LO: 4, 5, Bloom: AP, Difficulty: Difficult, Time: 15-20, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

### EXERCISE 10.23 (20–25 minutes)

- (a) C
- (b) E (immaterial)
- (c) C
- (d) C
- (e) C
- (f) C
- (g) C
- (h) E

LO: 4, Bloom: C, Difficulty: Moderate, Time: 10-15, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

### EXERCISE 10.24 (20–25 minutes)

(a)	Depreciation Expense (8/12 X \$60,000) .....	40,000	
	Accumulated Depreciation—Machinery .....		40,000
	Loss on Disposal of Machinery .....	470,000	
	(\$1,300,000 – \$400,000) – \$430,000		
	Cash .....	430,000	
	Accumulated Depreciation—Machinery		
	(\$360,000 + \$40,000) .....	400,000	
	Machine .....		1,300,000
(b)	Depreciation Expense (3/12 X \$60,000) .....	15,000	
	Accumulated Depreciation—Machinery .....		15,000
	Cash .....	1,040,000	
	Accumulated Depreciation—Machinery		
	(\$360,000 + \$15,000) .....	375,000	
	Machine .....		1,300,000
	Gain on Disposal of Machinery .....		115,000*
	*\$1,040,000 – (\$1,300,000 – \$375,000)		

**EXERCISE 10.24 (Continued)**

(c)	Depreciation Expense (7/12 X \$60,000) .....	35,000	
	Accumulated Depreciation—Machinery .....		35,000
	Contribution Expense .....	1,100,000	
	Accumulated Depreciation—Machinery .....	395,000	
	(\$360,000 + \$35,000)		
	Machine .....		1,300,000
	Gain on Disposal of Machinery .....		195,000*
	*\$1,100,000 – (\$1,300,000 – \$395,000)		

LO: 5, Bloom: AP, Difficulty: Moderate, Time: 20-25, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**EXERCISE 10.25 (15–20 minutes)**

April 1	Cash .....	430,000	
	Accumulated Depreciation—Buildings .....	160,000	
	Land .....		60,000
	Building .....		280,000
	Gain on Disposal of Plant Assets .....		250,000*

**\*Computation of gain:**

Less: Cash received		\$430,000
Book value of land	\$ 60,000	
Book value of buildings		
(\$280,000 – \$160,000)	<u>120,000</u>	
Book value of land and building		<u>(180,000)</u>
Gain on disposal		<u>\$250,000</u>

Aug. 1	Land .....	90,000	
	Buildings .....	400,000	
	Cash .....		490,000

LO: 5, Bloom: AP, Difficulty: Moderate, Time: 15-20, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None



# SOLUTIONS TO PROBLEMS

<b>PROBLEM 10.1</b>
---------------------

(a)

## REAGAN COMPANY Analysis of Land Account for 2020

Balance at January 1, 2020.....		\$ 230,000
 <b><u>Land site number 621</u></b>		
Acquisition cost .....	\$850,000	
Commission to real estate agent .....	51,000	
Clearing costs .....	\$35,000	
Less: Amounts recovered .....	<u>13,000</u>	<u>22,000</u>
Total land site number 621.....		923,000
 <b><u>Land site number 622</u></b>		
Land value .....	300,000	
Building value.....	120,000	
Demolition cost .....	<u>41,000</u>	
Total land site number 622.....		<u>461,000</u>
Balance at December 31, 2020 .....		<u>\$1,614,000</u>

## REAGAN COMPANY Analysis of Buildings Account for 2020

Balance at January 1, 2020.....		\$ 890,000
<b>Cost of new building constructed on land site number 622</b>		
Construction costs .....	\$330,000	
Excavation fees.....	38,000	
Architectural design fees .....	11,000	
Building permit fee.....	<u>2,500</u>	<u>381,500</u>
Balance at December 31, 2020 .....		<u>\$1,271,500</u>

**PROBLEM 10.1 (Continued)**

**REAGAN COMPANY**  
**Analysis of Leasehold Improvements Account**  
**for 2020**

Balance at January 1, 2020.....	\$660,000
Office space improvements.....	<u>89,000</u>
Balance at December 31, 2020 .....	<u>\$749,000</u>

**REAGAN COMPANY**  
**Analysis of Equipment Account**  
**for 2020**

Balance at January 1, 2020.....		\$875,000
Cost of the new equipment acquired		
Invoice price.....	\$ 87,000	
Freight costs .....	3,300	
Installation costs.....	<u>2,400</u>	<u>92,700</u>
Balance at December 31, 2020 .....		<u>\$967,700</u>

**(b) Items in the fact situation which were not used to determine the answer to (a) above are as follows:**

- 1. Interest imputed on equity (stock) financing of \$8,500 is not permitted by GAAP and thus does not appear in any financial statement.**
- 2. Land site number 623, which was acquired for \$650,000, should be included in Reagan's balance sheet as land held for resale (investment section).**
- 3. Royalty payments of \$17,500 should be included as a normal operating expense in Reagan's income statement.**

LO: 1, Bloom: AP, Difficulty: Moderate, Time: 35-40, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**PROBLEM 10.2**

(a)

**LOBO CORPORATION  
Analysis of Land Account  
2020**

<b>Balance at January 1, 2020 .....</b>	<b>\$ 300,000</b>
<b>Plant facility acquired from Mendota Company—portion of fair value allocated to land (Schedule 1) .....</b>	<b><u>185,000</u></b>
<b>Balance at December 31, 2020 .....</b>	<b><u>\$ 485,000</u></b>

**LOBO CORPORATION  
Analysis of Land Improvements Account  
2020**

<b>Balance at January 1, 2020 .....</b>	<b>\$ 140,000</b>
<b>Parking lots, streets, and sidewalks.....</b>	<b><u>95,000</u></b>
<b>Balance at December 31, 2020 .....</b>	<b><u>\$ 235,000</u></b>

**LOBO CORPORATION  
Analysis of Buildings Account  
2020**

<b>Balance at January 1, 2020 .....</b>	<b>\$1,100,000</b>
<b>Plant facility acquired from Mendota Company—portion of fair value allocated to building (Schedule 1).....</b>	<b><u>555,000</u></b>
<b>Balance at December 31, 2020 .....</b>	<b><u>\$1,655,000</u></b>

**LOBO CORPORATION  
Analysis of Equipment Account  
2020**

<b>Balance at January 1, 2020 .....</b>	<b>\$ 960,000</b>
<b>Cost of new equipment acquired</b>	
<b>Invoice price.....</b>	<b>\$400,000</b>
<b>Freight and unloading costs .....</b>	<b>13,000</b>
<b>Sales taxes .....</b>	<b>20,000</b>
<b>Installation costs .....</b>	<b><u>26,000</u></b>
	<b><u>459,000</u></b>
	<b>1,419,000</b>

**PROBLEM 10.2 (Continued)**

Deduct cost of equipment disposed of		
Equipment scrapped June 30, 2020 .....	\$ 80,000*	
Equipment sold July 1, 2020 .....	<u>44,000*</u>	<u>124,000</u>
Balance at December 31, 2020 .....		<u>\$1,295,000</u>

\*The accumulated depreciation account can be ignored for this part of the problem.

**Schedule 1**

**Computation of Fair Value of Plant Facility Acquired from Mendota Company and Allocation to Land and Building**

20,000 shares of Lobo common stock at \$37 quoted market price on date of exchange (20,000 X \$37) \$740,000

Allocation to land and building accounts in proportion to appraised values at the exchange date:

	Amount	Percentage of total	
Land	<u>\$230,000</u>	<u>25% (230/920)</u>	
Building	<u>690,000</u>	<u>75% (690/920)</u>	
Total	<u>\$920,000</u>	<u>100%</u>	
Land	(\$740,000 X .25)		<u>\$185,000</u>
Building	(\$740,000 X .75)		<u>555,000</u>
Total			<u>\$740,000</u>

(b) Items in the fact situation that were not used to determine the answer to (a) above, are as follows:

1. The tract of land, which was acquired for \$150,000 as a potential future building site, should be included in Lobo's balance sheet as an investment in land.
2. The \$110,000 and \$320,000 book values respective to the land and building carried on Mendota's books at the exchange date are not used by Lobo since they are not relevant.

## PROBLEM 10.2 (Continued)

3. The \$12,080 loss (Schedule 2) incurred on the scrapping of a machine on June 30, 2020, should be included in the other expenses and losses section in Lobo's income statement. The \$67,920 accumulated depreciation (Schedule 3) should be deducted from the Accumulated Depreciation—Equipment account in Lobo's balance sheet.
4. The \$3,000 loss on sale of equipment on July 1, 2020 (Schedule 4) should be included in the other expenses and losses section of Lobo's income statement. The \$21,000 accumulated depreciation (Schedule 4) should be deducted from the Accumulated Depreciation—Equipment account in Lobo's balance sheet.

### Schedule 2

#### Loss on Scrapping of Machine June 30, 2020

Cost, January 1, 2012.....	\$80,000
Less: Accumulated depreciation (double-declining-balance method, 10-year life) January 1, 2012, to June 30, 2020 (Schedule 3).....	<u>67,920</u>
Asset book value June 30, 2020	<u>\$12,080</u>
Loss on scrapping of machine.....	<u>\$12,080</u>

**PROBLEM 10.2 (Continued)**

**Schedule 3**

**Accumulated Depreciation Using  
Double-Declining-Balance Method**  
**June 30, 2020**  
**(Double-declining-balance rate is 20%)**

Year	Book Value at Beginning of Year	Depreciation Expense	Accumulated Depreciation
2012	\$80,000	\$16,000	\$16,000
2013	64,000	12,800	28,800
2014	51,200	10,240	39,040
2015	40,960	8,192	47,232
2016	32,768	6,554	53,786
2017	26,214	5,243	59,029
2018	20,971	4,194	63,223
2019	16,777	3,355	66,578
2020 (6 months)	13,422	1,342*	67,920

\*(2,684 x 6/12)

**Schedule 4**

**Loss on Sale of Machine**  
**July 1, 2020**

Cost, January 1, 2017.....	\$44,000
Less: Depreciation (straight-line method, salvage value of \$2,000, 7-year life) January 1, 2017, to July 1, 2020 [ $3\frac{1}{2}$ years $(\$44,000 - \$2,000) \div 7$ ] .....	<u>21,000</u>
Asset book value July 1, 2020 .....	<u>\$23,000</u>
Asset book value .....	\$23,000
Less: Proceeds from sale .....	<u>20,000</u>
Loss on sale.....	<u>\$ 3,000</u>

LO: 1, 5, Bloom: AP, Difficulty: Difficult, Time: 40-55, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**PROBLEM 10.3**

(a)	1.	Land (Schedule A).....	188,700	
		Buildings (Schedule B).....	136,250	
		Insurance Expense (6 months X \$95 <sup>a</sup> ).....	570	
		Prepaid Insurance (16 months X \$95 <sup>a</sup> ).....	1,520	
		Organization Expense.....	610	
		Retained Earnings.....	53,800	
		Salaries and Wages Expense.....	32,100	
		Land and Buildings.....		399,950
		Paid-in Capital in Excess of Par— Common Stock		
		[800 shares X (\$117- \$100)].....		13,600

**Schedule A**

Amount Consists of:

Acquisition Cost		
	(\$80,000 + [800 X \$117]).....	\$173,600
	Removal of Old Building.....	9,800
	Legal Fees (Examination of title).....	1,300
	Special Tax Assessment.....	4,000
	Total.....	<u>\$188,700</u>

**Schedule B**

Amount Consists of:

Legal Fees (Construction contract).....		\$ 1,860
	Construction Costs (First payment).....	60,000
	Construction Costs (Second payment).....	40,000
	Insurance (2 months)	
	([2,280 ÷ 24] = \$95 <sup>a</sup> X 2 = \$190).....	190
	Plant Superintendent's Salary.....	4,200
	Construction Costs (Final payment).....	30,000
	Total.....	<u>\$136,250</u>

	2.	Land and Buildings (See Schedule C).....	4,000	
		Depreciation Expense.....		2,637
		Accumulated Depreciation—Buildings.....		1,363

**PROBLEM 10.3 (Continued)**

**Schedule C**

Depreciation taken .....		\$ 4,000
Depreciation that should be taken (.01 X \$136,250).....		<u>(1,363)</u>
Depreciation adjustment.....		<u>\$ 2,637</u>

**(b) Property, Plant, and Equipment:**

Land .....		\$188,700
Buildings.....	\$136,250	
Less: Accumulated depreciation.....	<u>1,363</u>	<u>134,887</u>
Total.....		<u>\$323,587</u>

LO: 1, 3, Bloom: AP, Difficulty: Difficult, Time: 35-45, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None



**PROBLEM 10.4**

The following accounting treatment appears appropriate for these items:

**Land**—The loss on the condemnation of the land of \$9,000 (\$40,000 – \$31,000) should be reported as an unusual and for infrequent item on the income statement. The \$35,000 land purchase has no income statement effect.

**Building**—There is no recognized gain or loss on the demolition of the building. The entire purchase cost (\$15,000), decreased by the demolition proceeds (\$3,600), is allocated to land.

**Warehouse**—The gain on the destruction of the warehouse should be reported as an unusual and/or infrequent item. The gain is computed as follows:

Insurance proceeds .....		\$74,000
Deduct: Cost.....	\$70,000	
Less: Accumulated depreciation .....	<u>16,000</u>	<u>54,000</u>
Realized gain .....		<u>\$20,000</u>

Some contend that a portion of this gain should be deferred because the proceeds are reinvested in similar assets. We do not believe such an approach should be permitted. Deferral of the gain in this situation is not permitted under GAAP.

**Machine**—The recognized gain on the transaction would be computed as follows:

Fair value of old machine .....		\$7,200
Deduct: Book value of old machine		
Cost .....	\$8,000	
Less: Accumulated depreciation.....	<u>2,800</u>	<u>5,200</u>
Total gain .....		<u>\$2,000</u>

$$\text{Total gain recognized} = \$2,000 \times \frac{\$900}{\$900 + \$6,300^*} = \underline{\underline{\$250}}$$

The gain deferred is \$1,750 (\$2,000 – \$250)

\*(\$7,200 - \$900)

## PROBLEM 10.4 (Continued)

This gain would probably be reported in other revenues and gains. It might be reported as an unusual item if the company believes that such a situation occurs infrequently and if material. The cost of the new machine would be capitalized at \$4,550.

Fair value of new machine (\$7,200 - \$900).....	\$6,300*
Less: Gain deferred (\$2,000 - \$250).....	<u>1,750</u>
Cost of new machine .....	<u>\$4,550</u>

**Furniture**—The contribution of the furniture would be reported as a contribution expense of \$3,100 with a related gain on disposition of furniture of \$950: \$3,100 - (\$10,000 - \$7,850). The contribution expense and the related gain may be netted, if desired.

**Automobile**—The loss on sale of the automobile of \$2,580: [\$2,960 - (\$9,000 - \$3,460)] should probably be reported in the other expenses or losses section.

LO: 1, 3, 5, Bloom: AN, Difficulty: Moderate, Time: 35-40, AACSB: Analytic, Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication

**PROBLEM 10.5**

(a) **BLAIR CORPORATION**  
**Cost of Land (Site #101)**  
**As of September 30, 2021**

Cost of land and old building .....	\$500,000
Real estate broker's commission.....	36,000
Legal fees.....	6,000
Title insurance .....	18,000
Removal of old building .....	<u>54,000</u>
Cost of land .....	<u>\$614,000</u>

(b) **BLAIR CORPORATION**  
**Cost of Building**  
**As of September 30, 2021**

Fixed construction contract price .....	\$3,000,000
Plans, specifications, and blueprints.....	21,000
Architects' fees.....	82,000
Interest capitalized during 2020 (Schedule 1) .....	130,000
Interest capitalized during 2021 (Schedule 2) .....	<u>190,000</u>
Cost of building .....	<u>\$3,423,000</u>

**Schedule 1**

**Interest Capitalized During 2020 and 2021**

	Weighted-average accumulated construction expenditures	X	Interest rate	=	Interest to be capitalized
<b>2020:</b>	\$1,300,000	X	.10	=	<u>\$130,000*</u>

\*Actual interest:  $\$3,000,000 \times .10 \times 10/12 = \$250,000$ .

<b>2021:</b>	\$1,900,000	X	.10	=	<u>\$190,000**</u>
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\*\*Actual interest:  $(\$3,000,000 \times .10 \times 2/12) +$   
 $(\$2,700,000^a \times .10 \times 10/12) = \$275,000$ .

$(\$3,000,000 - \$300,000)^a$

LO: 1,2, Bloom: AP, Difficulty: Moderate, Time: 20-30, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**PROBLEM 10.6**

**INTEREST CAPITALIZATION  
Balance in the Land Account**

Purchase Price .....	\$139,000
Surveying Costs .....	2,000
Title Insurance Policy.....	4,000
Demolition Costs.....	3,000
Salvage.....	<u>(1,000)</u>
<b>Total Land Cost.....</b>	<b><u>\$147,000</u></b>

<u>Expenditures (2020)</u>			<u>Weighted—Average Accumulated Expenditures</u>
Date	Amount	Fraction	
1-Dec	\$147,000	1/12	\$12,250
1-Dec	30,000	1/12	2,500
1-Dec	3,000	1/12	250
	<u>\$180,000</u>		<u>\$15,000</u>

**Interest Capitalized for 2020**

Weighted—Average Accumulated Expenditures	Interest Rate	Amount Capitalizable
\$15,000	8%	<u>\$1,200</u>

**Interest charged to Interest Expense**  
 $[(\$600,000 \times .08 \times \frac{1}{12}) - \$1,200]$  \$2,800



**PROBLEM 10.7**

**(a) Computation of Weighted-Average Accumulated Expenditures**

Expenditures			Capitalization		Weighted-Average
Date	Amount	X	Period	=	Accumulated Expenditures
July 30, 2020	\$ 900,000		10/12		\$ 750,000
January 30, 2021	1,500,000		4/12		500,000
May 30, 2021	<u>1,600,000</u>		0		<u>0</u>
	<u>\$4,000,000</u>				<u>\$1,250,000</u>

	<b>Weighted-Average Accumulated Expenditures</b>	X	<b>Weighted-Average Interest Rate</b>	=	<b>Avoidable interest</b>
	<b>\$1,250,000</b>		<b>.112</b>		<b><u>\$140,000</u></b>

**Loans Outstanding During Construction Period**

	Principal	Actual Interest
10% five-year note	\$2,000,000	\$200,000
12% ten-year bond	<u>3,000,000</u>	<u>360,000</u>
	<u>\$5,000,000</u>	<u>\$560,000</u>

$$\frac{\text{Total interest}}{\text{Total principal}} = \frac{\$560,000}{\$5,000,000} = 11.2\% \text{ (weighted-average rate)}$$

**(c) (1) and (2)**

Total actual interest cost	<u>\$560,000</u>
Total interest capitalized	<u>\$140,000</u>
Total interest expensed (\$560,000 - \$140,000)	<u>\$420,000</u>

LO: 2, Bloom: AP, Difficulty: Moderate, Time: 20-30, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**PROBLEM 10.8**

<b>1. <u>Holyfield Corporation</u></b>			
		23,000	
Cash .....			
Machinery (\$92,000 - \$23,000) .....		69,000	
Accumulated Depreciation—Machinery .....		60,000	
Loss on Disposal of Machinery .....		8,000	
Machinery .....			160,000
Computation of loss: Book value	\$100,000		
	(\$160,000 - \$60,000)		
Less: Fair value	<u>92,000</u>		
Loss		<u>\$ 8,000</u>	
 <b><u>Dorsett Company</u></b>			
		92,000	
Machinery .....			
Accumulated Depreciation—Machinery .....		45,000	
Loss on Disposal of Machinery .....		6,000	
Cash .....			23,000
Machinery .....			120,000
Computation of loss: Book value	\$ 75,000		
	(\$120,000 - \$45,000)		
Less: Fair value	<u>69,000</u>		
Loss		<u>\$ 6,000</u>	
 <b>2. <u>Holyfield Corporation</u></b>			
		92,000	
Machinery .....			
Accumulated Depreciation—Machinery .....		60,000	
Loss on Disposal of Machinery .....		8,000	
Machinery .....			160,000
 <b><u>Winston Company</u></b>			
		81,000	
Machinery (\$92,000 - \$11,000) .....			
Accumulated Depreciation—Machinery .....		71,000	
Machinery .....			152,000
Computation of gain			
deferred:	Fair value	\$92,000	
Less: Book value		<u>81,000</u>	
(\$152,000 - \$71,000)			
Gain deferred		<u>\$11,000</u>	

**PROBLEM 10.8 (Continued)**

<b>3.</b>	<b><u>Holyfield Corporation</u></b>		
	Machinery .....	95,000 <sup>f</sup>	
	Accumulated Depreciation—Machinery .....	60,000	
	Loss on Disposal of Machinery.....	8,000 <sup>a</sup>	
	Machinery .....		160,000
	Cash .....		3,000
	 <b><u>Liston Company</u></b>		
	Machinery (\$95,000 <sup>f</sup> - \$3,000) .....	92,000	
	Accumulated Depreciation—Machinery .....	75,000	
	Cash .....	3,000	
	Machinery .....		160,000
	Gain on Disposal of Machinery .....		10,000 <sup>e</sup>
	 *Fair value	<u>\$ 95,000<sup>f</sup></u>	
	Less: Book value	<u>85,000</u>	
	(\$160,000 - \$75,000)		
	Gain	<u>\$ 10,000<sup>e</sup></u>	

Because the exchange has commercial substance, the entire gain should be recognized.

<b>4.</b>	<b><u>Holyfield Corporation</u></b>		
	Machinery .....	185,000	
	Accumulated Depreciation—Machinery .....	60,000	
	Loss on Disposal of Machinery.....	8,000 <sup>a</sup>	
	Machinery .....		160,000
	Cash .....		93,000
	 <b><u>Greeley Company</u></b>		
	Cash .....	93,000	
	Inventory .....	92,000	
	Sales Revenue .....		185,000
	 Cost of Goods Sold.....	130,000	
	Inventory .....		130,000

LO: 3, Bloom: AP, Difficulty: Difficult, Time: 35-45, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None



<b>PROBLEM 10.9</b>
---------------------

(a) Exchange has commercial substance:

Hyde, Inc.'s Books

Machinery (B) .....	75,000	
Accumulated Depreciation—Machinery (A) .....	40,000	
Machinery (A) .....		96,000
Gain on Disposal of Machinery (\$60,000 – [\$96,000 – \$40,000]).....		4,000
Cash .....		15,000

Wiggins, Inc.'s Books

Cash .....	15,000	
Machinery (A) .....	60,000	
Accumulated Depreciation—Machinery (B) .....	47,000	
Machinery (B) .....		110,000
Gain on Disposal of Machinery (\$75,000 – [\$110,000 – \$47,000]).....		12,000

(b) Exchange lacks commercial substance:

Hyde, Inc.'s Books

Machinery (B) (\$75,000 – \$4,000) .....	71,000*	
Accumulated Depreciation—Machinery (A) .....	40,000	
Machinery (A) .....		96,000
Cash .....		15,000

\*Computation of gain deferred:

Fair value	\$60,000	
Less: Book value (\$96,000 – \$40,000)	<u>56,000</u>	
Gain deferred	<u>\$ 4,000</u>	

**PROBLEM 10.9 (Continued)**

**Wiggins, Inc.'s Books**

Cash .....	15,000	
Machinery (A) .....	50,400**	
Accumulated Depreciation—Machinery (B) .....	47,000	
Machinery (B) .....		110,000
Gain on Disposal of Machinery .....		2,400*

**Computation of total gain:**

Fair value of Asset B	\$75,000
Less: Book value of Asset B	<u>63,000</u>
Gain on disposal of assets	<u>\$12,000</u>

\*Gain recognized =  $\frac{\$15,000}{\$15,000 + \$60,000} \times \$12,000 = \underline{\underline{\$2,400}}$

**Fair value of asset acquired	\$60,000
Less: Gain deferred (\$12,000 – \$2,400)	<u>9,600</u>
Basis of Machinery A	<u>\$50,400</u>

OR

Book value of Machinery B	\$63,000
Less: Portion of book value sold	<u>12,600</u>
	<u>\$50,400</u>

**Note to instructor:** This illustrates the exception to no gain or loss recognition for exchanges that lack commercial substance. Although it would be rare for an exchange to lack commercial substance when cash is received, a gain can be recognized based on the proportion of cash received to the overall fair value.

<b>PROBLEM 10.10</b>
----------------------

**(a) Has Commercial Substance**

<u>Marshall Construction</u>			
1.	Equipment (\$82,000 + \$118,000).....	200,000	
	Accumulated Depreciation—Equipment .....	50,000	
	Loss on Disposal of Equipment.....	8,000*	
	Equipment.....		140,000
	Cash .....		118,000
	<b>*Computation of loss:</b>		
	Book value of old crane		
	(\$140,000 – \$50,000)	\$90,000	
	Less: Fair value of old crane	<u>82,000</u>	
	Loss on disposal of equipment	<u>\$ 8,000</u>	

<u>Brigham Manufacturing</u>			
2.	Cash .....	118,000	
	Inventory .....	82,000	
	Sales Revenue.....		200,000
	Cost of Goods Sold.....	165,000	
	Inventory .....		165,000

**(b) Lacks Commercial Substance**

1. Marshall Construction should record the same entry as in part (a) above, since the exchange resulted in a loss.
  
2. Brigham should record the same entry as in part (a) above. No gain is deferred because we are assuming that Marshall is a customer. In addition, because the cash involved is greater than 25% of the value of the exchange, the entire transaction is considered a monetary transaction and a gain is recognized.

**PROBLEM 10.10 (Continued)**

**(c) Has Commercial Substance**

<u>Marshall Construction</u>			
1.	Equipment (\$98,000 + \$102,000).....	200,000	
	Accumulated Depreciation—Equipment .....	50,000	
	Equipment.....		140,000
	Cash .....		102,000
	Gain on Disposal of Equipment.....		8,000*
	*Computation of gain:		
	Fair value of old crane	\$98,000	
	Less: Book value of old crane		
	(\$140,000 – \$50,000)	<u>90,000</u>	
	Gain on Disposal of Equipment	<u>\$ 8,000</u>	

<u>Brigham Manufacturing</u>			
2.	Cash .....	102,000	
	Inventory .....	98,000	
	Sales Revenue .....		200,000
	Cost of Goods Sold .....	165,000	
	Inventory .....		165,000

**(d)**

<u>Marshall Construction</u>			
1.	Equipment.....	200,000	
	Accumulated Depreciation—Equipment .....	50,000	
	Cash .....		103,000
	Equipment.....		140,000
	Gain on Disposal of Equipment.....		7,000*

\*[Fair Value—Old (\$97,000) – Book Value—Old (\$90,000)]

**Note:** Cash involved is greater than 25% of the value of the exchange, so the gain is not deferred.

## PROBLEM 10.10 (Continued)

<u>Brigham Manufacturing</u>			
2.	Cash .....	103,000	
	Inventory .....	97,000	
	Sales Revenue .....		200,000
	Cost of Goods Sold.....	165,000	
	Inventory .....		165,000

Same reasons as cited in (b) (2) on the previous pages.

**Note:** Even though the exchange lacks commercial substance, cash paid exceeds 25% of total fair value so the transaction is treated as a monetary exchange and recorded at fair value. Note that with this much cash involved, it is unlikely that the exchange would lack commercial substance.

LO: 3, Bloom: AP, Difficulty: Difficult, Time: 30-40, AACSB: Analytic, AICPA BB: None, AICPA FC: Reporting, AICPA PC: None

**PROBLEM 10.11**

- (a) The major characteristics of plant assets, such as land, buildings, and equipment, which differentiate them from other types of assets are presented below.
1. Plant assets are acquired for use in the regular operations of the enterprise and are not for resale.
  2. Property, plant, and equipment possess physical substance or existence and are thus differentiated from intangible assets such as patents and goodwill. Unlike other assets that possess physical substance (i.e., raw material), property, plant, and equipment do not physically become part of the product held for resale.
  3. These assets are durable and long-term in nature and are usually subject to depreciation.
- (b) *Transaction 1.* To properly reflect cost, assets purchased on deferred payment contracts should be accounted for at the present value of the consideration exchanged between the contracting parties at the date of the consideration. When no interest rate is stated, interest must be imputed at a rate that approximates the rate that would be negotiated in an arm's-length transaction. In addition, all costs necessary to ready the asset for its intended use are considered to be costs of the asset.

**Asset cost = Present value of ordinary annuity (4 periods) for the note +  
Freight + Installation**

$$\begin{aligned} &= \left[ \left( \frac{\$28,000}{4} \right) \times 3.17 \right] + \$425 + \$500 \\ &= \$22,190 + 925 \\ &= \$23,115 \end{aligned}$$

## PROBLEM 10.11 (Continued)

**Transaction 2.** The lump-sum purchase of a group of assets should be accounted for by allocating the total cost among the various assets on the basis of their relative fair values. The \$8,000 of interest expense incurred for financing the purchase is a period cost and is not a factor in determining asset cost.

Inventory	$\$220,000 \times (\$50,000/\$250,000) = \$$	44,000
Land	$\$220,000 \times (\$80,000/\$250,000) = \$$	70,400
Building	$\$220,000 \times (\$120,000/\$250,000) =$	\$105,600

**Transaction 3.** The cost of a nonmonetary asset acquired in an exchange that has commercial substance should be recorded at the fair value of the asset given up plus any cash paid. Furthermore, any gain on the exchange is also recognized.

Fair value of trucks.....	\$46,000
Cash paid .....	<u>19,000</u>
Cost of land.....	<u>\$65,000</u>

- (c) 1. A building purchased for speculative purposes is not a plant asset as it is not being used in normal operations. The building is more appropriately classified as an investment.
2. The two-year insurance policy covering plant equipment is not a plant asset because it has no physical substance and is not durable. This policy is more appropriately classified as a current asset (for the portion to be used up within the next 12 months), and as an Other asset for the long-term portion.
3. The rights for the exclusive use of a process used in the manufacture of ballet shoes are not plant assets as they have no physical substance. The rights should be classified as an intangible asset.

LO: 1, 3, Bloom: AN, Difficulty: Moderate, Time: 35-45, AACSB: Analytic, Communication, AICPA BB: None, AICPA FC: Reporting, AICPA PC: Communication