Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter 8 Notes

Accounting for Plant Assets

**8.1: Buying Plant Assets**

* **Current Assets** – *cash and other assets expected to be exchanged for cash or consumed within one year*
* **Plant Assets** -

	+ Examples:
* **Plant Asset Record** -

**Practice Problem**

*Depreciate all plant assets using the straight-line method. Plant asset records, a general journal, and a cash payments journal are provided below. Source documents are abbreviated as: check, C; memorandum, M.*

1. Journalize the transactions completed during January. General ledger accounts are: Office Equipment, 1225 and Warehouse Equipment, 1245. *(Application Problem 8.1)*

 Jan. 3 Paid cash for scanner (plant asset no. 162), $600; no estimated salvage value; estimated useful life, three years; serial no. V2GR34. C310.



 Jan. 5 Bought freight scale (plant asset no. 163) on account from Trent, Inc. $2,800; estimated salvage value, $400; estimated useful life, five years; serial no. GY52232B. M61.



1. Complete section 1 of a plant asset record for new asset purchases. *(Application Problem 8.1)*





**Calculating and Paying Property Tax**

* In most states, businesses have to pay taxes on \_\_\_\_\_\_\_\_\_\_\_\_\_ assets. For tax purposes, state and federal governments define two kinds of property:
1. **Real Property** -
2. **Personal Property** -
* *Assessed Value of Property*
	+ **Assessed Value** -
	+ Assessed value is usually based on the judgement of persons referred to as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. An asset’s assessed value may not be the same as the \_\_\_\_\_\_\_\_\_\_\_\_ value on the business’s or individual’s records. It is used for \_\_\_\_\_\_\_\_ purposes only. However, many persons and businesses use the assessed value to estimate the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ value of an asset.
* *Calculating Property Tax on Plant Assets*
	+ Most governmental units with taxing power have a tax based on the value of \_\_\_\_\_\_\_\_\_\_\_\_\_ property; used on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and land. Some governmental units also tax personal property such as cars, \_\_\_\_\_\_\_\_\_\_\_\_, trailers, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	+ The tax rate is multiplied by an asset’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ value, not the book value recorded on a business’s records.
* *Paying Property Tax on Plant Assets*
	+ Payment of property taxes is necessary if a firm is to continue in business. Therefore, property tax is classified as an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ expense.

**Practice Problem**

*A cash payments journal is provided below. Source document is abbreviated as: check, C.*

1. Journalize the transaction completed in February. *(Application Problem 8.2)*

 Feb. 5 Paid property taxes on real property with an assessed value of $215,000. The tax rate in the city where the property is located is 3.5% of assessed value. C389.

1. 

**8.2: Calculating and Journalizing Depreciation Expense**

* Plant assets may \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, may no longer be needed in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a business, or may become \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by new models. To match revenue with expenses incurred to earn it, the cost of a plant asset should be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to an expense account over the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ life of the plant asset.
* **Depreciation Expense** -
* Because of its permanent nature, \_\_\_\_\_\_\_\_\_\_\_\_\_ is not subject to depreciation. Increases or decreases in land value are usually recorded only when land is \_\_\_\_\_\_\_\_\_\_\_\_\_ or otherwise \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Three factors are used to calculate a plant asset’s annual depreciation expense:
1. **Original Cost** -
2. **Estimated Salvage Value** -
3. **Estimated Useful Life** -
* **Straight-Line Depreciation** -

	+ Example: On January 2, 20X1, Appliance Center bought a computer for $2,000 with an estimated salvage value of $175 and an estimated useful life of five years.

 Original Cost $2,000

- Estimated Salvage Value - 175

= Estimated Total Depreciation Expense $1,825

÷ Years of Estimated Useful Life ÷ 5

= Annual Depreciation Expense $365

 Beginning Book Value (Year 1) $2,000

- Annual Depreciation - 365

= Ending Book Value (Year 1) $1,635

**Practice Problem**

*Use the plant asset records from the Practice Problem in Section 8.1. Depreciation tables are provided below.*

1. Complete the depreciation table for each asset using the straight-line depreciation method. If the asset was not purchased beginning of 20X1, compute depreciation expense for the part of 20X1 that the company owned the asset. *(Application Problem 8.3)*

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* *Recording Depreciation on Plant Asset Records*
	+ Annual depreciation expense is recorded in two places for each plant asset:
1. On the plant asset \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. As part of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ entries that are posted to general ledger accounts
	* **Book Value of a Plant Asset** -
	* At the end of the estimated \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ life, the plant asset should be depreciated down to its estimated \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ value.
	* A plant asset’s *actual* useful life may \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the estimated useful life. If a plant asset is used longer than the estimated useful life, depreciation is \_\_\_\_\_\_\_\_\_\_ recorded one the \_\_\_\_\_\_\_\_\_\_\_\_ value equals the estimated salvage value.

**Practice Problem**

*Plant asset records are provided below.*

1. Complete each plant asset record for 20X1 through 20X4. *(Application Problem 8.3)*





* *Journalizing Annual Depreciation Expense*
	+ After depreciation expense is recorded on the plant asset records, depreciation amounts for the year are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	+ An \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ entry is made to record \_\_\_\_\_\_\_\_\_\_\_\_ depreciation expense for the fiscal year for each \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of plant assets.
* *Calculating Depreciation Expense for Part of a Year*
	+ A plant asset may be placed in service at a date other than the first day of a fiscal period. In such cases, depreciation expense is calculated to the nearest \_\_\_\_\_\_\_\_\_\_\_\_ of a month.

 Annual Depreciation Expense $120

÷ Months in a Year ÷ 12

= Monthly Depreciation Expense $10

x Number of Months Asset is Used x 5

= Partial Year’s Depreciation Expense $50

**Practice Problem**

*A general journal is provided below.*

1. Journalize the adjusting entries to record depreciation expense for 20X1. *(Application Problem 8.4)*

**8.3: Disposing of Plant Assets**

* A business usually disposes of a plant asset in one of three ways:
1. The plant asset is discarded because no \_\_\_\_\_\_\_\_\_\_\_\_ life remains.
2. The plant asset is \_\_\_\_\_\_\_\_\_\_\_ because it is no longer needed even though it might still be usable.
3. The plant asset is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for another plant asset of the same kind.
* *Discarding a Plant Asset with No Book Value*
	+ If a plant asset has a salvage value of zero and its total accumulated depreciation is equal to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cost value, the plant asset has no \_\_\_\_\_\_\_\_\_\_\_\_ value. The journal entry to discard this plant asset \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the original cost of the plant asset and its related \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ depreciation as shown below.
		- Example: Discarded storage cabinet: original cost, $275; total accumulated depreciation through December 31, 20X5, $275. M72.
			* Debit: Accumulated Depreciation – Office Equipment, $275
			* Credit: Office Equipment, $275
* *Discarding a Plant Asset with a Book Value*
	+ A plant asset may be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of at any time during its useful life. When a plant asset is disposed of, its depreciation \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the current fiscal year to the date of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is recorded as shown below, in two entries.
		- Example: Discarded office table: original cost, $200; total accumulated depreciation through December 31, 20X5, $140; additional depreciation to be recorded through June 30, 20X6, $20. M92.
			* Entry 1: Remove the original cost of the plant asset and its related accumulated depreciation.
				+ Debit: Depreciation Expense – Office Equipment, $20
				+ Credit: Accumulated Depreciation – office Equipment, $20
			* Entry 2: Recognize the loss on disposal of the asset.
				+ Debit: Accumulated Depreciation – Office Equipment, $160
				+ Debit: Loss on Plant Assets, $40
				+ Credit: Office Equipment, $200
* *Selling a Plant Asset*
	+ When a plant asset is sold, a journal entry is recorded to:
* Remove the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the plant asset and its related accumulated \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Recognize the \_\_\_\_\_\_\_\_\_\_\_\_ received.
* Recognize the \_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_ on disposal of the asset.
	+ Example: Received cash from sale of fax machine, $185: original cost, $600; total accumulated depreciation through December 31, 20X5, $400. R60.
		- Debit: Accumulated Depreciation – Office Equipment, $400
		- Debit: Loss on Plant Assets, $15
		- Debit: Cash, $185
		- Credit: Office Equipment, $600
* *Trading a Plant Asset*
	+ When an old plant asset is traded for a new plant asset, the journal entry:
1. Removes the original cost of the old plant asset and its related accumulated \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Recognizes the \_\_\_\_\_\_\_\_\_\_\_\_ paid.
3. Records the new plant asset at its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cost.
	* Example: Paid cash, $650, plus old counter for new store counter: original cost of old counter, $1,000; total accumulated depreciation through June 27, 20X6, $765. M130 and C154.
		+ Debit: Store Equipment, $1,085
		+ Debit: Accumulated Depreciation – Store Equipment, $765
		+ Credit: Store Equipment, $1,000
		+ Credit: Cash, $850
* *Selling Land and Buildings*
	+ Land is considered to be a permanent plant asset. Therefore, its useful life is not \_\_\_\_\_\_\_\_\_\_\_\_\_ and annual depreciation is not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for it. The book value of land is the original cost.
	+ Land is seldom discarded. Usually land is sold at the same time that the buildings on it are sold. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plant record is maintained for the land and the building. Each record is updated when a sale is made. The journal entry:
1. Removes the original cost of the land and building and the building’s related accumulated depreciation.
2. Recognizes the cash received.
3. Recognizes the gain on disposal of the plant assets.
	* Example: Fidelity Company sold land with a building for $97,000 cash; original cost of land, $25,000; original cost of building, $250,000; total accumulated depreciation on building through December 31, 20X5, $85,000. R105.
		+ Debit: Accumulated Depreciation – Building, $85,000
		+ Debit: Cash, $97,000
		+ Credit: Land, $25,000
		+ Credit: Building, $150,000
		+ Credit: Gain on Plant Assets, $7,000

**Practice Problem**

*Use the plant asset records from the Practice Problem in Section 8.2. The following transactions occurred in 20X5. A general journal, cash receipts journal, and plant asset records are provided below. Source documents are abbreviated as follows: check, C; memorandum, M; receipt, R.*

1. Journalize additional depreciation, if needed. Journalize the disposal of each plant asset. *(Application Problem 8.5; Application Problem 8.6 for Dec. 30)*
2. Make appropriate notations in the plant asset records.

 Jan. 3 Discarded scanner, no. 162. M65.

 Mar. 30 Received cash for sale of freight scale, no. 163, $600. M125 and R145.

 June 26 Received cash for sale of a desk, no. 127, $500. M151 and R273.

 Dec. 28 Paid cash, $30,000, plus old truck, no. 116, for new truck, no. 172. M222 and C671.

 Dec. 30 Sold land, no. 105, and a building, no. 106, for $110,000. M224 and M663.













**8.4: Other Methods of Depreciation**

* *Declining-Balance Method of Depreciation*
	+ Many plant assets depreciate \_\_\_\_\_\_\_\_\_\_\_ in the early years of useful life than in the later years. Charging more depreciation expense in the \_\_\_\_\_\_\_\_\_\_\_ years of a plant asset may be more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than charging the \_\_\_\_\_\_\_\_\_\_\_\_\_ amount each year.
	+ **Declining-Balance Method of Depreciation** -
	+ Although the depreciation \_\_\_\_\_\_\_\_\_ is the same each year, the annual depreciation expense \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from year to year.
	+ A declining-balance rate that is \_\_\_\_\_\_\_\_\_\_\_\_ the straight-line method rate is commonly used. This is referred to as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ declining-balance method.
		- Example: A plant asset with an estimated useful life of five years would have a depreciation rate of 40%.

 Total Depreciation Expense 100%

÷ Estimated Useful Life ÷ 5

= Straight-Line Rate 20%

x Double the Rate x 2

= Declining-Balance Rate 40%

* + The annual depreciation expense is calculated using the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ book value for each year. In the asset’s first year of service, the beginning book value equals the \_\_\_\_\_\_\_\_\_\_\_\_ cost.
	+ A plant asset is never depreciated below its estimated \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ value. Therefore, in the last year, only \_\_\_\_\_\_\_\_\_\_\_\_\_\_ depreciation expense is recorded to reduce the \_\_\_\_\_\_\_\_\_ value of the plant asset to its salvage value.

**Practice Problem**

*The following information relates to a delivery truck purchased on January 2, 20X1. A depreciation table is provided below.*

1. Complete the depreciation table showing depreciation expense calculated using double declining-balance. *(Application Problem 8.7)*

 Original Cost $90,000

 Estimated Salvage Value $6,000

 Estimated Useful Life 3 years



* *Sum-of-the-Years’-Digits Method of Depreciation*
	+ Another method of calculating depreciation is based on a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ derived from the years’ digits for the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ life of a plant asset.
	+ **Sum-of-the-Years’-Digits Method of Depreciation** -
	+ Example: A plant asset has a useful life of five years. The fractions are determined as follows:
1. The years’ digits are added (1 + 2 + 3 + 4 + 5 = 15).
2. Then, a fraction is created for each year with the years’ digits in \_\_\_\_\_\_\_\_\_\_\_\_\_ order:

 Year 1 5/15

 Year 2 4/15

 Year 3 3/15

 Year 4 2/15

 Year 5 1/15

* + The depreciation expense for each year is calculated by multiplying the \_\_\_\_\_\_\_\_\_\_ depreciation expense times the fraction for that year. In the last year, the \_\_\_\_\_\_\_\_\_\_\_\_\_ book value will equal the plant asset’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_ value.

**Practice Problem**

*The following information relates to a delivery truck purchased on January 2, 20X1. A depreciation table is provided below.*

1. Complete the depreciation table showing depreciation expense calculated using sum-of-the-year’s-digits. *(Application Problem 8.7)*

 Original Cost $90,000

 Estimated Salvage Value $6,000

 Estimated Useful Life 3 years



* *Production-Unit Method of Depreciation*
	+ Sometimes the useful life a plant asset depends on how much the asset is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	+ **Production-Unit Method of Depreciation** -
	+ Example: A truck originally cost $18,200, had an estimated salvage value of $2,000, and an estimated useful life of 90,000 miles. The depreciation \_\_\_\_\_\_\_\_\_\_ for the truck is calculated by dividing the estimated \_\_\_\_\_\_\_\_\_\_\_\_ depreciation expense by the estimated useful life.

 Original Cost $18,200

- Estimated Salvage Value - 2,000

= Estimated Total Depreciation Expense $16,200

÷ Estimated Useful Life ÷ 90,000 miles

= Depreciation Rate $0.18 /mile

* + - The annual depreciation expense is calculated by multiplying the total number of \_\_\_\_\_\_\_\_\_\_\_\_ driven by the depreciation \_\_\_\_\_\_\_\_\_\_\_\_\_.

**Practice Problem**

*The following information relates to a delivery truck purchased on January 2, 20X1. A depreciation table is provided below.*

1. Complete the depreciation table showing depreciation expense calculated using production-unit. *(Application Problem 8.8)*

 Miles Driven

 Original Cost $90,000 20X1 34,600

 Estimated Salvage Value $6,000 20X2 47,300

 Estimated Useful Life 200,000 miles 20X3 52,800

 20X4 36,900



* *Calculating Depreciation Expense for Income Tax Purposes (MACRS Method of Depreciation)*
	+ **Modified Accelerated Cost Recovery System** (aka MACRS) -
	+ MACRS is a depreciation method with prescribed periods for \_\_\_\_\_\_\_\_\_\_\_\_ classes of useful life for plant assets. A property is assigned to a specified class based on its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and general \_\_\_\_\_\_\_\_\_\_\_ expectancy.
	+ The two most common classes, other than real estate, are the \_\_\_\_\_\_\_-year and the \_\_\_\_\_\_\_\_\_\_\_-year property classes.
		- The five-year class includes: \_\_\_\_\_\_\_\_\_\_\_\_, general-purpose trucks, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, manufacturing equipment, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ machinery.
		- The seven-year class includes: office \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	+ The depreciation approximates the use of the double declining-balance method.
	+ To calculate depreciation using MACRS, the IRS has prescribed methods that use annual \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to determine the depreciation. These rates are applied to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cost of the plant asset without considering \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ value. All plant assets are assumed to be place in service in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the year and taken out of service in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the year.
	+ Example: A printer, with an original cost of $2,000 is classified as five-year property. With the MACRS method, its depreciation is spread over six years as shown.

 *Year Depreciation Rate Annual Depreciation*

 1 20.00% $400.00

 2 32.00% 640.00

 3 19.20% 384.00

 4 11.52% 230.40

 5 11.52% 230.40

 6 5.76% 115.20

 Totals 100.00% $2,000.00

**Practice Problem**

*The following information relates to a delivery truck purchased on January 2, 20X1. A depreciation table is provided below.*

1. Complete the depreciation table showing depreciation expense calculated using MACRS. *(Application Problem 8.9)*

 Original Cost $90,000

 MACRS Property Class 5 years

* *Depletion*
	+ Some plant assets decrease in value because \_\_\_\_\_\_\_\_\_\_\_\_\_ of these plant assets is physically removed in the operation of a business.
	+ **Depletion** -
	+ Example: A business owns land on which a coal mine is located. The land with the coal has an original cost of $100,000. The company’s experts estimated that the land contains 50,000 tons of recoverable coal. The estimated value of the remaining land after the coal is removed is $12,250. The depletion rate of the land per ton of coal is calculated as follows:

 Original Cost $100,000

- Estimated Salvage Value - 12,250

= Estimated Total Value of Coal $87,750

÷ Estimated Tons of Recoverable Coal ÷ 50,000

= Depreciation Rate per Ton of Coal $1,755

* + - The annual depreciation expense is calculated by multiplying the depreciation rate by the tons of coal removed that year.

**Practice Problem**

*The following data relate to a mineral mine owned by Kellogg, Inc. A depletion table is provided below.*

1. Complete a table showing depletion expense calculated using the production-unit method. *(Application Problem 8.10)*

 Tons Mined

 Original Cost $260,000 20X1 3,500

 Estimated Salvage Value $60,000 20X2 12,500

 Estimated Tons of 20X3 15,600

 Recoverable Mineral 60,000 tons

