CHAPTER 9

SOLUTIONS TO EXERCISES—SET B

EXERCISE 9-1B

(a) Under the historical cost principle, the acquisition cost for a plant asset includes all expenditures necessary to acquire the asset and make it ready for its intended use. For example, the cost of factory machinery includes the purchase price, freight costs paid by the purchaser, insurance costs during transit, and installation costs.

(b) 1. Equipment

2. Equipment

3. Land

4. Land Improvements

5. Equipment

6. License Expense

7. Prepaid Insurance

8. Equipment

EXERCISE 9-2B

1. Equipment

2. Equipment

3. Equipment

4. Land Improvements

5. Prepaid Insurance

6. Land

7. Land Improvements

8. Buildings

9. Land

EXERCISE 9-3B

(a) Cost of land

Cash paid $75,000

Net cost of removing warehouse

  ($6,400 – $1,200) 5,200

Attorney’s fee   800

Real estate broker’s fee 3,800

Total $84,800

(b) The architect’s fee ($5,800) should be debited to the Buildings account. The cost of the driveways and parking lot ($11,000) should be debited to Land Improvements.

EXERCISE 9-4B

1. True.

2. False. Depreciation enables companies to properly match the expense of using buildings and equipment to the revenues they help earn.

3. True.

4. False. Depreciation applies to three classes of plant assets: land *improve­ments,* buildings, and equipment.

5. True.

6. True.

7. False. Recognizing depreciation on an asset *does not result* in an ac­cumulation of cash for replacement of the asset.

8. False. The balance in accumulated depreciation represents the total cost that has been charged to expense.

9. False. Depreciation expense is reported on the income statement, and *accumulated depreciation is reported as a deduction from plant assets on the balance sheet.*

10. True.

EXERCISE 9-5B

(a) Depreciation cost per unit is $1.80 per mile

  [($188,000 – $8,000) ÷ 100,000].

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| (b) |  |  | Computation | | |  |  |  | End of Year | | |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | Year |  | Units of  Activity | X | Depreciation  Cost/Unit | = | Annual  Depreciation  Expense |  | Accumulated  Depreciation |  | Book  Value |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  | 2022  2023  2024  2025 |  | 27,000  34,000  24,000  15,000 |  | $1.80   1.80   1.80   1.80 |  | $48,600   61,200   43,200   27,000 |  | $ 48,600    109,800   153,000  180,000 |  | $139,400   78,200   35,000    8,000 |

EXERCISE 9-6B

(a) Straight-line method:

= $24,000 per year.

2022 depreciation = $24,000 X 3/12 = $6,000.

(b) Units-of-activity method:

= $6.00 per hour.

2022 depreciation = 3,400 hours X $6.00 = $20,400.

(c) Declining-balance method:

2022 depreciation = $145,000 X 40% X 3/12 = $14,500.

Book value January 1, 2023 = $145,000 – $14,500 = $130,500.

2023 depreciation = $130,500 X 40% = $52,200.

EXERCISE 9-7B

(a) (1) 2022: ($50,000 – $4,000)/8 = $5,750

2023: ($50,000 – $4,000)/8 = $5,750

(2) ($50,000 – $4,000)/100,000 = $0.46 per mile

2022: 15,000 X $0.46 = $6,900

2023: 12,000 X $0.46 = $5,520

(3) 2022: $50,000 X 25% = $12,500

2023: ($50,000 – $12,500) X 25% = $9,375

(b) (1) Depreciation Expense 5,750

Accumulated Depreciation—Equipment 5,750

(2) Equipment $50,000

Less: Accumulated Depreciation—

Equipment 5,750

$44,250

EXERCISE 9-8B

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| (a) | Type of Asset |  | Building |  | Warehouse |
|  |  |  |  |  |  |
|  | Book value, 1/1/22  Less: Salvage value  Depreciable cost  Revised useful life in years  Revised annual depreciation |  | $859,000  45,000  $814,000  44    $ 18,500 |  | $162,000  12,000  $150,000  15   $ 10,000 |

(b) Dec. 31 Depreciation Expense 18,500

Accumulated Depreciation—

  Buildings 18,500

EXERCISE 9-9B

Jan. 1 Accumulated Depreciation—Equipment 75,000

Machinery 75,000

June 30 Depreciation Expense  3,500

Accumulated Depreciation—

  Equipment ($35,000 X 1/5 X 6/12)  3,500

30 Cash 12,500

Accumulated Depreciation—Equipment 24,500

  ($35,000 X 3/5 = $21,000; $21,000 + $3,500)

Gain on Disposal of Plant Assets

  [$12,500 – ($35,000 – $24,500)] 2,000

Equipment 35,000

Dec. 31 Depreciation Expense  6,000

Accumulated Depreciation—Equipment

  [($40,000 – $4,000) X 1/6] 6,000

31 Loss on Disposal of Plant Assets  10,000

Accumulated Depreciation—Equipment

  [($40,000 – $4,000) X 5/6] 30,000

Equipment 40,000

EXERCISE 9-10B

(a) Cash 38,000

Accumulated Depreciation—Equipment

 [($70,000 – $10,000) X 3/5] 36,000

Equipment 70,000

Gain on Disposal of Plant Assets 4,000

(b) Depreciation Expense

 [($70,000 – $10,000) X 1/5 X 4/12] 4,000

Accumulated Depreciation—Equipment 4,000

Cash 38,000

Accumulated Depreciation—Equipment

 ($36,000 + $4,000) 40,000

Equipment 70,000

Gain on Disposal of Plant Assets 8,000

(c) Cash 23,000

Accumulated Depreciation—Equipment 36,000

Loss on Disposal of Plant Assets 11,000

Equipment 70,000

(d) Depreciation Expense

 [($70,000 – $10,000) X 1/5 X 9/12] 9,000

Accumulated Depreciation—Equipment 9,000

Cash 23,000

Accumulated Depreciation—Equipment

 ($36,000 + $9,000) 45,000

Loss on Disposal of Plant Assets 2,000

Equipment 70,000

EXERCISE 9-11B

(a) Dec. 31 Depletion Expense 75,000

Accumulated Depletion

  (100,000 X $.75) 75,000

Cost (1) $900,000

Units estimated (2) 1,200,000 tons

Depletion cost per unit [(1) ÷ (2)] $.75

1. The costs pertaining to the unsold units are reported in current assets as part of inventory (20,000 X $.75 = $15,000).

EXERCISE 9-12B

Dec. 31 Amortization Expense   16,000

Patents ($120,000 X 1/5 X 8/12)   16,000

Note: No entry is made to amortize goodwill because it has an indefinite life.

EXERCISE 9-13B

1/2/22 Patents 840,000

Cash 840,000

4/1/22 Goodwill 450,000

Cash 450,000

  (Part of the entry to record

   purchase of another company)

7/1/22 Franchises 330,000

Cash 330,000

9/1/22 Research and Development Expense 210,000

Cash 210,000

12/31/22 Amortization Expense

  ($840,000 ÷ 7) + [($330,000 ÷ 10) X 1/2] 136,500

Patents  120,000

Franchises  16,500

Ending balances, 12/31/22:

Patents = $720,000 ($840,000 – $120,000).

Goodwill = $450,000

Franchises = $313,500 ($330,000 – $16,500).

R&D expense = $210,000

EXERCISE 9-14B

Asset turnover =  = 2.5 times

\*EXERCISE 9-15B

(a) Equipment (new) 54,000

Accumulated Depreciation—Equipment (old) 42,000

Loss on Disposal of Plant Assets  7,000

Equipment (old) 74,000

Cash 29,000

  Cost of old trucks $74,000

  Less: Accumulated depreciation 42,000

  Book value  32,000

  Fair value of old trucks 25,000

  Loss on disposal $ 7,000

  Fair value of old trucks $25,000

  Cash paid 29,000

  Cost of new trucks $54,000

(b) Equipment (new) 25,000

Accumulated Depreciation—Equipment (old)  14,000

Gain on Disposal 2,000

Equipment (old) 20,000

Cash  17,000

  Cost of old machine $20,000

  Less: Accumulated depreciation 14,000

  Book value   6,000

  Fair value of old machine 8,000

  Gain on disposal $ 2,000

  Fair value of old machine $ 8,000

  Cash paid 17,000

  Cost of new machine $25,000

\*EXERCISE 9-16B

(a) Equipment (new)  8,000

Loss on Disposal of Plant Assets  2,000

Accumulated Depreciation—Equipment (old) 25,000

Equipment (old) 35,000

  Cost of old truck $35,000

  Less: Accumulated depreciation  25,000

  Book value  10,000

  Fair value of old truck 8,000

  Loss on disposal $ 2,000

(b) Equipment (new)  8,000

Accumulated Depreciation—Equipment (old)  16,000

Equipment (old) 21,000

Gain on Disposal of Plant Assets 3,000

  Cost of old truck $21,000

  Less: Accumulated depreciation 16,000

  Book value   5,000

  Fair value of old truck 8,000

  Gain on Disposal $ 3,000

  Cost of new delivery truck\* $ 8,000

  \*Fair value of old truck