

## FA Module 13 Double declining balance and deferred taxes practice exam questions

covering shareholders' equity, long-lived assets, estimated useful life, salvage value, tax rates, operating losses, deferred tax assets and liabilities, straight line depreciation, double declining balance depreciation, depreciation expense, shareholders' equity, financial leverage, tax basis, carrying value

(The attached PDF file has better formatting.)

On January 1, 20XX, a firm has shareholders' equity of 400 and cash of 400.

The firm buys a long-lived asset on January 1, 20XX, for 231, with an estimated useful life of 8 years and a salvage value (at the end of its estimated useful life) of 69.

The firm has no revenue or expenses besides those stemming from the long-lived asset. The tax rate is 10% and the firm can carry back operating losses against previous years' income; that is, assume all deferred tax assets and liabilities can be fully used and affect the financial statements.

The firm uses straight line depreciation for financial reporting and double declining balance depreciation for taxable income.

### Question 13.1: Financial depreciation

What is depreciation expense on the 20XX income statement?

Answer 13.1:  $(231 - 69) / 8 = 20.25$

(straight line depreciation = (purchase price – salvage value) / estimated useful life)

### Question 13.2: Tax depreciation

What is depreciation expense for 20XX taxable income?

Answer 13.2:  $2 \times 231 / 8 = 57.75$

(double declining balance depreciation =  $2 \times$  carrying value / estimated useful life)

### Question 13.3: Operating cash flow

What is the operating cash flow in 20XX?

Answer 13.3:  $(0 - -57.75) \times 10\% = 5.775$

(operating cash flow = negative of taxable income  $\times$  the tax rate)

### Question 13.4: Pre-tax income

What is pre-tax income in 20XX?

Answer 13.4:  $0 - 20.25 = (20.25)$

(pre-tax income = negative of financial depreciation)

Question 13.5: Deferred tax asset or liability

What is the deferred tax asset (liability) on December 31, 20XX?

Answer 13.5:  $(20.25 - 57.75) \times 10\% = (3.75)$

(change in deferred tax asset = tax rate  $\times$  (tax basis – carrying value) = tax rate  $\times$  (financial depreciation – tax depreciation) )

Question 13.6: Tax expense

What is tax expense on the income statement in 20XX?

Answer 13.6:  $-20.25 \times 10\% = (2.025)$

(tax expense = pre-tax income  $\times$  tax rate)

Question 13.7: Net income

What is net (after-tax) income in 20XX?

Answer 13.7:  $-20.25 - (-2.025) = (18.225)$

(net income = pre-tax income – tax expense)

Question 13.8: Shareholders' equity

What is shareholders' equity at December 31, 20XX?

Answer 13.8:  $400 + (-18.225) = 381.775$

(shareholders' equity increases by net income)

Question 13.9: Financial leverage

What is the firm's financial leverage at December 31, 20XX? For this problem, use the year-end balance sheet values, not the average calendar year values.

Answer 13.9:  $(400 - 20.25 - (-5.775)) / 381.775 = 1.010$

(assets = initial assets – financial depreciation – taxes paid; financial leverage = assets / shareholders' equity)

Question 13.10: Financial depreciation

What is depreciation expense on the 20XX+1 income statement?

Answer 13.10:  $(231 - 69) / 8 = 20.25$

(straight line depreciation = (purchase price – salvage value) / estimated useful life)

Question 13.11: Tax depreciation

What is depreciation expense for 20XX+1 taxable income?

Answer 13.11:  $2 \times (231 - 57.75) / 8 = 43.3125$

(double declining balance depreciation =  $2 \times$  carrying value / estimated useful life)

Question 13.12: Operating cash flow

What is the operating cash flow in 20XX+1?

Answer 13.12:  $(0 - -43.3125) \times 10\% = 4.33125$

(operating cash flow = negative of taxable income  $\times$  the tax rate)

Question 13.13: Pre-tax income

What is pre-tax income in 20XX+1?

Answer 13.13:  $0 - 20.25 = (20.25)$

(pre-tax income = negative of financial depreciation)

Question 13.14: Deferred tax asset or liability

What is the deferred tax asset (liability) on December 31, 20XX+1?

Answer 13.14:  $-3.75 + (20.25 - 43.3125) \times 10\% = (6.05625)$

(deferred tax asset (liability) = tax rate  $\times$  (tax basis – carrying value)  $\Rightarrow$  change in deferred tax asset (liability) = tax rate  $\times$  (financial depreciation – tax depreciation) )

Question 13.15: Tax expense

What is tax expense on the income statement in 20XX+1?

Answer 13.15:  $-20.25 \times 10\% = (2.025)$

(tax expense = pre-tax income  $\times$  tax rate)

Question 13.16: Net income

What is net (after-tax) income in 20XX+1?

Answer 13.16:  $-20.25 - -2.025 = (18.225)$

(net income = pre-tax income – tax expense)

Question 13.17: Shareholders' equity

What is shareholders' equity at December 31, 20XX+1?

Answer 13.17:  $381.775 + -18.225 = 363.55$

(shareholders' equity increases by net income)

Question 13.18: Financial leverage

What is the firm's financial leverage at December 31, 20XX+1? For this problem, use the year-end balance sheet values, not the average calendar year values.

Answer 13.18:  $(400 - 20.25 - -5.775 - 20.25 - -4.33125) / 363.55 = 1.017$

(assets = initial assets – financial depreciation – taxes paid; financial leverage = assets / shareholders' equity)