Chapter 17 Pensions

QUESTIONS FOR REVIEW OF KEY TOPICS

Question 17-1

Pension plans are arrangements designed to provide income to individuals during their retirement years. Funds are set aside during an employee's working years so that the accumulated funds plus earnings from investing those funds are available to replace wages at retirement. An individual has a pension fund when she or he periodically invests in stocks, bonds, CDs, or other securities for the purpose of saving for retirement. When an employer establishes a pension plan, the employer provides some or all of the periodic contributions to the retirement fund.

The motivation for corporations to establish pension plans comes from several sources. Pension plans provide employees with a degree of retirement security. They may fulfill a moral obligation many employers feel toward employees. Pension plans often enhance productivity, reduce turnover, satisfy union demands, and allow employers to compete in the labor market.

Question 17-2

A qualified pension plan gains important tax advantages. The employer is permitted an immediate tax deduction for amounts paid into the pension fund. Conversely, the benefits to employees are not taxed until retirement benefits are received. Also, earnings on the funds set aside by the employer accumulate tax-free. For a pension plan to be qualified for special tax treatment, these general requirements must be met:

1. It must cover at least 70% of employees.
2. It cannot discriminate in favor of highly compensated employees.
3. It must be funded in advance of retirement through contributions to an irrevocable trust fund.
4. Benefits must "vest" after a specified period of service, commonly five years.
5. It complies with specific restrictions on the timing and amount of contributions and benefits.

Question 17-3

This is a noncontributory plan because the corporation makes all contributions. When employees make contributions to the plan in addition to employer contributions, it's called a "contributory" plan. This is *defined contribution* plan because it promises fixed annual contributions to a pension fund, without further commitment regarding benefit amounts at retirement.

Question 17-4

The vested benefit obligation is the pension benefit obligation that is *not* contingent upon an employee's continuing service.

Question 17-5

The *accumulated benefit obligation* is the discounted present value of retirement benefits calculated by applying the pension formula with no attempt to forecast what salaries will be when the formula actually is applied. The *projected benefit obligation* is the present value of those benefits when the actuary includes projected salaries in the pension formula.

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Answers to Questions (continued)

Question 17-6

The projected benefit obligation can change due to periodic service cost, accrued interest, revised estimates, plan amendments, and the payment of benefits.

Question 17-7

The balance of the plan assets can change due to investment returns, employer contributions, and the payment of benefits.

Question 17-8

The pension expense reported on the income statement is a composite of periodic changes that occur in both the pension obligation and the plan assets. These include service cost, interest cost, return on the plan assets, and the amortization of prior service cost and of net gains or losses.

Question 17-9

The service cost in connection with a pension plan is the present value of benefits attributed by the pension formula to employee service during the period, projecting future salary levels (i.e., the projected benefits approach).

Question 17-10

The interest cost is the projected benefit obligation outstanding at the beginning of the period multiplied by the actuary's interest (discount) rate. This is the "interest expense" that accrues on the PBO and is included as a component of pension expense rather than being separately reported.

Question 17-11

SFAS 87 specifies that the *actual* return be included in the determination of pension expense. However, the actual return is adjusted for any difference between actual and expected return, meaning that the *expected* return is really the amount reflected in the calculation of pension expense. This "investment revenue" is deducted as a component of pension expense rather than being separately reported.

The difference between actual and expected return on plan assets is combined with gains and losses from other sources for possible future amortization to pension expense.

Question 17-12

Prior service cost is the obligation (present value of benefits) due to giving credit to employees for years of service provided before either the date of an amendment to (or initiation of) a pension plan. Prior service cost is not formally recognized as a separate account in the company's records. The cost is allocated to pension expense over the service period of affected employees. The straight-line method allocates an equal amount of the prior service cost to each year. The service method recognizes the cost each year in proportion to the fraction of the total remaining "service years" worked in each of these years.

Question 17-13

Gains or losses related to pension plan assets represent the difference between the return on investments and what the return had been expected to be. They should be deferred until total net gains or losses exceed a defined threshold. Specifically, a *portion* of the excess is included in pension

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expense only if it exceeds an amount equal to 10% of the PBO, or 10% of plan assets, whichever is higher. The minimum amount that should be included is the excess divided by the average remaining service period of active employees expected to receive benefits under the plan. Gains or losses related to the pension obligation are treated the same way. In fact, gains and losses from both sources are combined to determine the net gains or net losses referred to above.

Question 17-14

The PBO, plan assets, unrecognized prior service cost, and the unrecognized net loss (or gain) represent "memorandum" accounts not formally recognized as separate accounts in the company's records. Their balances are monitored in the informal records, though, because they are reported in disclosure notes, and changes in their balances affect amounts that are formally recognized.

Question 17-15

The two components of pension expense that may reduce pension expense are the return on plan assets (always) and the amortization of a net gain (amortizing a net loss increases the expense).

Question 17-16

The components of pension expense that involve delayed recognition are the prior service cost and gains and losses.

Question 17-17

The excess of the *actual* return on plan assets over the *expected* return is considered a gain. It may, in fact, decrease the employer's pension cost, but not immediately. It is grouped with other gains and losses and is amortized as a component of pension expense only if the net gain or net loss exceeds an amount equal to 10% of the PBO, or 10% of plan assets, whichever is higher.

Question 17-18

The difference between the pension expense and the cash contribution is debited or credited, depending on the situation, to a single account: prepaid (accrued) pension cost. Consistent with other situations when an expense is overpaid, the excess payment represents an asset – prepaid pension cost. Quite often, the cash payment is less than the expense. In those instances, the underpayment represents a liability.

Question 17-19

Conceptually, the pension liability is best measured by the PBO. This apparently was the majority view of the FASB. The PBO also is specified for determining the service cost and interest cost components of the pension expense. However, the balance sheet reports either an *accrued* pension cost as a liability or a *prepaid* pension cost as an asset, depending on whether the prepaid (accrued) pension cost account has a credit or a debit balance. This amount is supplemented to provide a minimum reported liability equal to excess of the accumulated benefit obligation over the plan assets when the ABO is underfunded. Also, SFAS 87 requires offsetting despite a theoretical preference by the Board for recognizing the pension liability and plan assets as separate elements of the balance sheet. In fact, the FASB acknowledged that this requirement is made "even though the liability has not been settled, the assets may still be largely controlled, and substantial risks and rewards associated with both of those amounts are clearly borne by the employer."

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Question 17-20

The difference between the employer's obligation (PBO) and the resources available to satisfy that obligation (plan assets) is the funded status of the pension plan. If all the changes in the PBO and plan assets were immediately recognized in pension expense, the balance in the prepaid (accrued) pension cost would report the funded status. This is because that balance would be the cumulative difference between the cash contributions and what's been expensed. However, not all the changes in the PBO and plan assets are immediately recognized in pension expense (recognition is delayed for both gains and losses and the prior service cost). Therefore, the unrecognized portions of each of these are reflected in the funded status, but *not yet in the prepaid (accrued) pension cost*. This means the difference between the funded status and the balance in prepaid (accrued) pension cost can be reconciled by the unrecognized prior service cost and the unrecognized net loss. In fact, this reconciliation must be disclosed in the financial statements.

Question 17-21

A minimum liability must be reported to the extent that the accumulated benefit obligation exceeds the fair value of plan assets. So, if there is a zero balance in the prepaid (accrued) pension cost account, an "additional liability" account must be established for the entire excess. If the account has a *credit* balance of more than the minimum liability, no additional liability would be required. Reporting the balance as a pension liability would be sufficient. If the account has a credit balance of less than the minimum liability, an additional liability would be required for the difference. If the account has a *debit* balance, an "additional liability" account must be established to combine with the prepaid (accrued) pension cost account balance to reflect the minimum liability.

EXERCISES

Exercise 17-1

		Events
I	1.	Interest cost.
N	2.	Amortization of prior service cost.
D	3.	A decrease in the average life expectancy of employees.
I	4.	An increase in the average life expectancy of employees.
I	5.	A plan amendment that increases benefits is made retroactive to prior years.
D	6.	An increase in the actuary's assumed discount rate.
N	7.	Cash contributions to the pension fund by the employer.
D	8.	Benefits are paid to retired employees.
I	9.	Service cost.
N	10.	Return on plan assets during the year lower than expected.
N	11.	Return on plan assets during the year higher than expected.

Exercise 17-2

	($ in millions)	
Beginning of 2003	$30	
Service cost	12	
Interest cost	3	➔ (10% x $30)
Loss (gain) on PBO	0	
Less: Retiree benefits	(4)	
End of 2003	$41	

Exercise 17-3

		Events
I	1.	Interest cost.
I	2.	Amortization of prior service cost.
N	3.	Excess of the expected return on plan assets over the actual return.
D	4.	Expected return on plan assets.
N	5.	A plan amendment that increases benefits is made retroactive to prior years.
N	6.	Actuary's estimate of the PBO is increased.
N	7.	Cash contributions to the pension fund by the employer.
N	8.	Benefits are paid to retired employees.
I	9.	Service cost.
N	10.	Excess of the actual return on plan assets over the expected return.
I	11.	Amortization of unrecognized net loss.
D	12.	Amortization of unrecognized net gain.

Exercise 17-5

	($ in millions)
Plan assets	
Beginning of 2003	$600
Actual return	48
Cash contributions	100
Less: Retiree benefits	(11)
End of 2003	$737

Exercise 17-6

	($ in millions)	
PBO:		
Beginning of 2003	$360	
Service cost	**?**	
Interest cost	36	→ (10% x $360)
Loss (gain) on PBO	0	
Less: Retiree benefits	(54)	
End of 2003	$465	

Service cost = $465 - 360 - 36 + 54 = $123 million

Exercise 17-7

	($ in millions)	
Plan assets		
Beginning of 2003	$700	
Actual return	77	→ (11% x $700)
Cash contributions	**?**	
Less: Retiree benefits	(66)	
End of 2003	$750	

Cash contributions = $750 - 700 - 77 + 66 = $39 million

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Exercise 17-10

Requirement 1

	($ in 000s)
Service cost	$310
Interest cost (7% x $2,300)	161
Actual return on the plan assets (9% x $2,400 = $216) adjusted for: $24 loss* on the plan assets	(240)
Amortization of prior service cost	25
Amortization of net gain	(6)
Pension expense	$250

* (10% x $2,400) – (9% x $2,400)

Requirement 2

	Debit	Credit
Pension expense (calculated above)	250	
Prepaid (accrued) pension cost (difference)		5
Cash (given)		245

Exercise 17-13

( )s indicate credits; debits otherwise ($ in thousands)	Informal Records				Formal Records		
	PBO	Plan Assets	Prior Service Cost	Net (gain) loss	Pension Expense	Cash	Prepaid (Accrued) Cost
Balance, Jan. 1, 2003	**(800)**	**600**	**114**	**80**			**(6)**
Service cost	(84)				84		
Interest cost, 5%	(40)				40		
Actual return on assets		42			(42)		
Loss on assets				6	(6)		
Amortization of:							
Prior service cost			(6)		6		
Net loss							
Gain on PBO	12			(12)			
Contributions to fund		48				(48)	
Retiree benefits paid	50	(50)					
2003 journal entry					82	(48)	(34)
Balance, Dec. 31, 2003	**(862)**	**640**	**108**	**74**			**(40)**

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Exercise 17-16

		List A		List B
_d_	1.	Future compensation levels estimated.	a.	Additional minimum liability
_f_	2.	All funding provided by the employer.	b.	Prepaid pension cost
_b_	3.	Cumulative employer's contributions in excess of recognized pension.	c.	Vested benefit obligation
			d.	Projected benefit obligation
_l_	4.	Retirement benefits specified by formula.	e.	Choice between PBO and ABO
			f.	Noncontributory pension plan
_e_	5.	Trade-off between relevance and reliability.	g.	Accumulated benefit obligation
			h.	Plan assets
_a_	6.	Causes a debit to an intangible asset.	i.	Interest cost
_g_	7.	Current pay levels implicitly assumed.	j.	Delayed recognition
_i_	8.	Created by the passage of time.	k.	Defined contribution plan
_c_	9.	Not contingent on future employment.	l.	Defined benefit plan
_k_	10.	Risk borne by employee.	m.	Prior service cost
_h_	11.	Increased by employer contributions.	n.	Amortize unrecognized net loss
_m_	12.	Caused by plan amendment.		
_j_	13.	Gain on plan assets.		
_n_	14.	Excess over 10% of plan assets or PBO.		

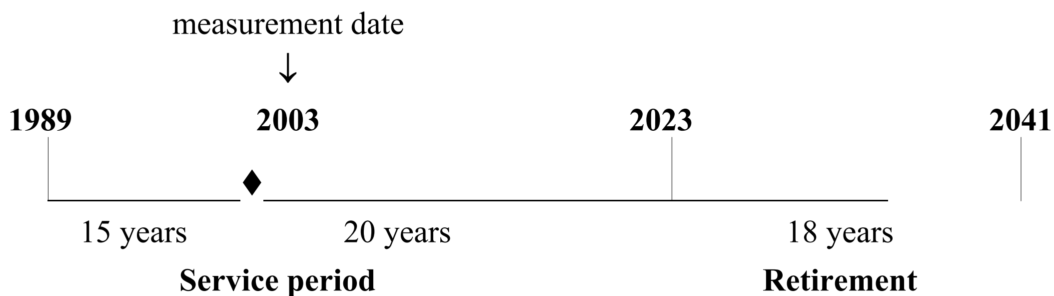
Exercise 17-19

1. d
2. c
3. d
4. b

PROBLEMS

Problem 17-2

Requirement 1



Requirement 2

1.6% x 15 x $240,000 = **$57,600**

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Requirement 3

The present value of the retirement annuity as of the retirement date (end of 2023) is:

$57,600 x 10.05909* = $579,404
[This is the lump-sum equivalent of the retirement
annuity as of the retirement date]

* present value of an ordinary annuity of $1: n=18, i=7%

The PBO is the present value of the retirement benefits at the end of 2003:

$579,404 x .25842 = **$149,730**

* present value of $1: n=20, i=7%

Requirement 4

1.6% x **18** x $240,000 = $69,120

$69,120 x 10.05909* = $695,284

$695,284 x .31657** = **$220,106**

* present value of an ordinary annuity of $1: n=18, i=7%
** present value of $1: **n=17**, i=7%

Problem 17-6

1. **Projected Benefit Obligation**

	($ in 000s)
Balance, January 1, 2003	$ 0
Service cost	150
Interest cost (6% x $0)	0
Benefits paid	(0)
Balance, December 31, 2003	$150
Service cost	200
Interest cost (6% x $150)	9
Benefits paid	(0)
Balance, December 31, 2004	$359

2. **Plan Assets**

Balance, January 1, 2003	$ 0
Actual return on plan assets (10% x $0)	0
Contributions, 2003	160
Benefits paid	(0)
Balance, December 31, 2003	$160
Actual return on plan assets (10% x $160)	16
Contributions, 2004	170
Benefits paid	(0)
Balance, December 31, 2004	$346

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3. **Pension expense – 2003**

Service cost	$150
Interest cost (6% x $0)	0
Return on the plan assets (10% x $0)	0
Pension expense	$150

Pension expense – 2004

Service cost	$200
Interest cost (6% x $150)	9
Return on the plan assets (10% x $160)	(16)
Pension expense	$193

4. **Prepaid (accrued) pension cost**

Balance, January 1, 2003	$ 0
2003 debit ($150,000 – 160,000)	10
Balance, December 31, 2003	$ 10
2004 credit ($193,000 – 170,000)	(23)
Balance, December 31, 2004 - credit	$(13)

Problem 17-8

Requirement 1

( )s indicate credits; debits otherwise ($ in millions)	Informal Records: PBO	Plan Assets	Prior Service Cost	Net gain	Formal Records: Pension Expense	Cash	Prepaid (Accrued) Cost
Jan. 1, 2003	(600)	800	26	(95)			131
Service cost	(65)				65		
Interest cost, 7%	(42)				42		
Actual return on assets		72			(72)		
Gain on assets				(8)	8		
Amortization of:							
Prior service cost			(2)		2		
Net gain				1	(1)		
Loss on PBO	(4)			4			
Contributions to fund		30				(30)	
Retiree benefits paid	52	(52)					
2003 journal entry					44	(30)	(14)
Dec. 31, 2003	(659)	850	24	(98)			117

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Problem 17-8 (concluded)

Requirement 2

	($ in millions)	
Pension expense (calculated above)	44	
Prepaid (accrued) pension cost (difference)		14
Cash (contribution to fund)..		30

Requirement 3

	($ in millions)
Projected benefit obligation	$(659)
Plan assets	850
Funded status	$ 191
Unamortized prior service cost	24
Unamortized net gain	(98)
Prepaid pension cost	$ 117

Problem 17-14

( )s indicate credits; debits otherwise ($ in 000s)	Informal Records				Formal Records		
	PBO	Plan Assets	Prior Service Cost	Net loss	Pen. Exp.	Cash	Prepaid Pension Cost
Jan. 1, 2003	(4,100)	4,530	840	477			1,747
Service cost[2]	(332)				332		
Interest cost, 7%[1]	(287)				287		
Actual return [3]		400			(400)		
Loss on assets[4]				53	(53)		
Amortization of:							
Prior service cost[5]			(70)		70		
Net loss[6]				(2)	2		
Gain on PBO	44			(44)			
Contributions to fund		340				(340)	
Retiree benefits paid	295	(295)					
2003 journal entry					238	(340)	102
Dec. 31, 2003	(4,380)	4,975	770	484			1,849

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[1] 7% x $4,100 = $287
[2] $4,380 - 4,100 - 287 + 44 + 295 = $332
[3] $4,975 - 4,530 - 340 + 295 = $400
[4] 10% x $4,530 = $453 (expected) - 400 = $53
[5] $840 ÷ 12 = $70
[6] ($477 - 453) ÷ 12 = $2

CASES

Ethics Case 17-6

Mr. Maxwell's apparent motivation for the change in the way contributions are handled is to have the company benefit from the earning power of the contributed funds for up to three months, prior to the funds being deposited for the benefit of the employees. Temporarily diverting 401(k) funds this way benefits the company at the expense of the employee.

There is some question as to whether the practice described is illegal. In practice, such cases are rarely prosecuted. Regardless of the legality, though, there is the ethical question of whether the employer should earn dividends, interest, etc. on funds deducted from employees' paychecks, prior to the funds being deposited to the employees' accounts.

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