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FALL 1996 EA-2 EXAM SOLUTIONS (Course P-365U)

Solutions last revised June 20, 2006

See revision history on next page

These solutions use beginning of year amortization payments in setting up the Minimum Funding Standard Account. These solutions were prepared based on the law as in effect at June 30, 1996.

These solutions have been compared with those produced by other technical actuaries, and they represent my best understanding of the correct way to solve these problems. As usual, it seems easy to get an answer in the correct range as long as you are not actually taking the exam!

For problems involving the deductible limit you should use the following sequence of steps:

1. Calculate the normal cost plus limit adjustments with interest to the earlier of the end of the plan year or the end of the tax year.

2. Calculate the Full Funding Limitation under Section 404 with interest to the end of the plan year. If this is less than the result of step one, then you can skip to step four.

3. Calculate the absolute minimum amount necessary to produce a non-negative credit balance in the Minimum Funding Standard Account. This amount should never be based on the Alternative MFSA. This amount may be increased by the amount of any "includible employer contribution."

4. The maximum deductible limit is the greater of (1) and (3), but not greater than (2).

5. If the Unfunded Current Liability exceeds the final deductible limit and the plan has more than 100 participants, then the final deductible limit will be the UCL. This UCL limit is only available to non-multiemployer plans.

Revision History:

June 20, 2006	Clarified solution for problems 21, 31 and 38
July 8, 2005	Clarified solution for problem 32 (page 2)
December 13, 2004	Clarified solution for problem 39
May 12, 2004	Updated solution for problem 38
December 17, 2002	Updated solution for problem 41 (page 2)
June 18, 2002	Updated solutions for problems 27 (page 1), and 35
July 9, 2001	Updated solution for problem 5
January 10, 2001	Updated solutions for problems 15 (page 1), 34, and 37
July 30, 2000	Updated solution for problem 44
July 6, 2000	Updated solution for problem 31 (page 2) and problem 38
September 13, 1999	Updated solution for problem 19
September 5, 1999	Updated solution for problem 39
November 23, 1998	Updated solution for problems 13, 22, 23, 24, 28, 31, 33, 41, and 42
September 23, 1998	Corrected minor typos in problems 14, 18, 27, 29-31, 38-40, 41 and 44
October 27, 1997	Original solutions

Problem 1

TRUE

This is a good example of how questions reappear on the exam. This is quite similar to 1995, problem number 4.

It is possible for a majority owner (substantial owner with more than 50% ownership) to waive a portion of their benefit. This would reduce the plan termination liability, and could enable a "standard" termination, which is fully funded.

Answer is A

Problem 2

FALSE

Revenue Ruling 95-31 contains information regarding application of the quarterly liquidity requirements. Plans which are subject to the quarterly contribution requirements are also subject to quarterly liquidity requirements.

Since this plan had a funded current liability percentage of 100% for the prior year, it is not subject to quarterly contribution requirements. As a result, it is not subject to quarterly liquidity requirements either.

Answer is B

Problem 3

FALSE

There is no general requirement that plans grant lump sum options to participants upon plan termination. If the plan document contains a lump sum option prior to plan termination, then it would have to offer the option to all participants.

Answer is B

Problem 4

FALSE

The family aggregation rules under §414(q)(6), referenced by §401(a)(17)(A), were still in effect in 1996. This problem should have been answered based on the Internal Revenue Code, as amended through June 30, 1996. The SBJPA changes that repealed family aggregation do not take effect until plan years starting in 1997.

Answer is B

Problem 5 **Revised 07/09/01**

FALSE

See §1.417(e)-1T(d)(10)(iii)(2)(C).

The change in lookback period may require grandfathering. A plan which was using the PBGC rates (or those rates reduced by a fixed amount, or a fixed percentage multiplied by those rates) prior to 1995 can avoid §411(d)(6) when it is amended. The plan must provide that the applicable interest rate is determined for the calendar month that was used for the PBGC rates, or 1 or 2 months immediately preceding that month .

If the time period is more than 2 months earlier, then it must include the 12 month transition rule . A change in the stability period would require grandfathering of the lump sum calculated using the prior stability period.

Answer is B

Problem 6

TRUE

See the instructions for Form PBGC-1.

Part I contains general instructions for the Schedule A. Subpart 1 contains instructions for the General Rule. Under Line 3(c), the discounted paid contributions are calculated using the valuation interest rate.

Subpart 2 contains instructions for the Alternative Calculation Method. Under Line 3(c), the discounted paid contributions are calculated using the required interest rate from Line 2.

Answer is A

Problem 7

FALSE

This is a trick question. §401(a)(31) of the Internal Revenue Code contains the rollover requirements for qualified plans. It states that if a participant is eligible for a rollover distribution from their current plan, and they elect to have the distribution paid to an "eligible retirement plan", then a direct trustee-to-trustee transfer should be made.

The trick is that the code does not specify that a qualified plan should accept a direct rollover transfer, only that a direct transfer can be made from a qualified plan to an "eligible retirement plan".

Answer is B

Problem 8

FALSE

§4980(a) of the Internal Revenue Code states that the excise tax upon reversion is 20%. §4980(d) states that the excise tax increases to 50% unless there is a "qualified replacement plan", or unless certain benefit increases are granted prior to plan termination.

Answer is B

Problem 9

TRUE

See §1.417(e)-1T(d)(4)(ii).
This is virtually a direct quote from the regulation.

Answer is A

Problem 10

TRUE

See §1.416-1, question T-23.
This is virtually a direct quote from the regulation.

Answer is A

Problem 11

TRUE

Section 6.01 of Revenue Procedure 95-51 contains "Basic Restrictions" applicable to all the approvals. Section 6.01(3) states that approval will not be granted for plans with an outstanding funding waiver.

Answer is A

Problem 12

FALSE

See §1.417(e)-1T(d)(10)(iii)(2)(B).
The change to eliminate use of the 6% rate does require grandfathering of the prior lump sum calculation. If the plan continued to use the greater of the lump sum at 6% and the lump sum on the post-GATT mandated interest and mortality, no grandfathering of the lump sum would be required.

Answer is B

Problem 13 - Page 1

With an individual cost method, there are two things to be aware of. One is that you should check the Full Funding Limitation if you have the market value of assets. The other is that you should check for experience gains or losses each year.

Since this is a brand new plan, the FFL is so large that it will not apply. You have to calculate the experience G/L during 1995. You must determine the expected UAL at 01/01/96, as well as the actual UAL at 01/01/96 before the plan amendment. The difference between those two values is the experience gain or loss base.

$$\begin{aligned} 01/96\ {}_eUAL &= (1+i)*(\ NC_0 + UAL_0\ ) - (\ contrib + i\ ) \\ &= 1.07 * (\ 25{,}000 + 115{,}000 - 40{,}000\ ) \\ &= 107{,}000 \end{aligned}$$

01/01/96 UAL	=	175,000 - 46,000	=	129,000
Old plan AL	=	175,000*(25/30)	=	145,833
Old plan UAL	=	145,833 - 46,000	=	99,833
Gain base	=	107,000 - 99,833	=	7,167
Amortization	=	1,634	=	$7{,}167 \div \ddot{a}_{\overline{5}\vert .07}$
Plan change	=	129,000 - 99,833	=	29,167
Amortization	=	2,197	=	$29{,}167 \div \ddot{a}_{\overline{30}\vert .07}$

The next step is to complete the MFSA for 1995. This will give you the 1996 MFSA credit balance.

IAL Amort. = 8,661 = $115{,}000 \div \ddot{a}_{\overline{30}\vert .07}$

1995 Minimum Funding Standard Account

Charges		Credits	
Normal Cost	25,000	Credit Balance	-0-
IAL Amort	8,661	01/01 contrib	40,000
7% interest	2,356	7% interest	2,800
Total charges	36,017	Total credits	42,800

The credit balance at 12/31/95 is 42,800 - 36,017 = 6,783.

Problem 13 - Page 2 **Revised 11/23/98**

1996 Minimum Funding Standard Account

Charges		**Credits**	
Normal Cost	29,000	Credit Balance	6,783
IAL Amort	8,661	1995 Gain	1,634
Plan change	2,197	12/31 contrib	x
7% interest	2,790	7% interest	589
Total charges	42,648	Total credits	x+9,005

The minimum contribution at 12/31/96 is 42,648 - 9,005 = 33,643.

Answer is B

Problem 14 - Page 1 **Revised 09/23/98**

At 01/01/96

Age	56	Birth date	01/01/40
Service	4 years	Hire date	01/01/92

§411(c)(2) of the IRC defines the calculation of the employee provided accrued benefit. After the passage of OBRA '89, the §417(e) graded rates are used to accumulate the employee contributions plus interest (EECWI) from the determination date to normal retirement age. The resulting EECWI is converted to an annual annuity by dividing by an annuity at the immediate interest rate. For a normal form other than a life annuity, factors in Revenue Ruling 76-47 were used to adjust the resulting benefit.

This plan has been amended to reflect the new GATT rules for lump sum calculations under §417(e)(3). The §417(e) rate is used to accumulate the employee contributions plus interest (EECWI) from the determination date to normal retirement age. The resulting EECWI is converted to an annual annuity by dividing by an annuity at the §417(e) interest rate.

The first step is to calculate the total accrued benefit at 01/01/96 :

Accrued benefit = 2.0% * (4 years) * (60,000)
= 4,800

The next step is to calculate each year's employee contributions, and then the amount of the employee provided accrued benefit:

Year	Pay	01/01 EECWI	12/31 contribution	120% A.F.R.	12/31 EECWI calculation
1992	60,000	-0-	1,800	N/A	1,800
1993	60,000	1,800	1,800	7.63%	3,737 = 1.0763 * 1,800 + 1,800
1994	60,000	3,737	1,800	6.40%	5,777 = 1.0640 * 3,737 + 1,800
1995	60,000	5,777	1,800	9.54%	8,128 = 1.0954 * 5,777 + 1,800

Smith is age 56 at 01/01/96, and you have to convert the contribution balance to a benefit at normal retirement age, which is 9 years later. The EECWI is accumulated with interest at the §417(e) rate until normal retirement age 65:

EECWI at 65 = $8,128 * (1.0606)^9$
= 13,802

Problem 14 - Page 2

The employee provided annual accrued benefit at age 65 is calculated by dividing by the annuity value at the §417(e) interest rate of 6.06%:

13,802 ÷ 10.60 = 1,302

The question asks for the vested annual accrued benefit. The employee provided portion is always 100% vested, and the remaining accrued benefit is subject to the plan's vesting schedule. With four years of service, Smith is 40% vested.

100% (1,302) + 40% (4,800 - 1,302) = 1,302 + 1,399 = 2,701

Answer is B

Problem 15 - Page 1 **Revised 01/10/01**

Revenue Procedure 95-51 contains the rules for setting up a new amortization base when there is a change in cost method. Section 5.01(1) of Revenue Procedure 95-51 specifies that certain bases must be maintained regardless of the funding method that is used. These bases include waivers, shortfall gains and losses, switchback from AMFSA, and the OBRA Full Funding credit base.

The main point of this problem is whether you know that you must keep the OBRA Full Funding bases after you change to the Aggregate cost method. The calculation of the normal cost under the Aggregate method must satisfy the formulas that are applicable to all reasonable funding methods (see the regulations at §1.412(c)(3)-1):

Except under the Aggregate method

PV Future Normal costs = PV Future Benefits - Actuarial Assets
- (O/S §412 amortization bases - credit balance - ARA)

Section 5.01(2) requires that you set up a new method change base such that the UAL = O/S 412 bases - credit balance - ARA. If you change to a method other than Aggregate, then you must determine the method change base so that the equation of balance is satisfied.

Amortization base	Original Base	Amortization	Remaining years	Outstanding base
1-1-90 OBRA base	35,000	4,657 = 35,000 / $\ddot{a}_{\overline{10}\|.07}$	4 = 10-(96-90)	16,879 = 4,657 * $\ddot{a}_{\overline{4}\|.07}$
1-1-93 OBRA base	40,000	5,323 = 40,000 / $\ddot{a}_{\overline{10}\|.07}$	7 = 10-(96-93)	30,693 = 5,323 * $\ddot{a}_{\overline{7}\|.07}$
All Total				47,572

PVNC = PVFB - AAV - O/S bases + CB
= 975,000 - 220,000 - 47,572 + 25,000
= 732,428

PVE/E = 6,400,000 / 400,000 = 16.0000
NC = 732,428 / 16.00
= 45,777

Problem 15 - Page 2

1996 Minimum Funding Standard Account

Charges		Credits	
Normal Cost	45,777	Credit Balance	25,000
1-1-90 FFC amortization	4,657		
1-1-93 FFC amortization	5,323	12/31 contrib	x
7% interest	3,903	7% interest	1,750
Total charges	59,659	Total credits	x + 26,750

This seems to imply that the minimum contribution is 59,659 - 26,750 = 32,909. First you should check the Full Funding Limitation for purposes of 412. Based on the 12/82 proposed regulation, the Accumulated Funding Deficiency based on no contribution and no credit balance must be calculated; this is simply the charges of 59,659 in this problem.

The ERISA Full Funding Limitation is defined as

ERISA FFL = 1.07(EAN AL + EANC) - 1.07(lesser MVA,AAV - CB)
= 1.07(455,000 + 45,000) - 1.07(220,000 - 25,000)
= 326,350

The ERISA FFL does not apply, and the minimum contribution at 12/31/96 is 59,659 - 26,750 = 32,909.

Answer is D

Problem 16

The average benefit percentage test is defined under the regulations at §1.410(b)-5 as the ratio of the actual benefit percentage (ABP) for non-highly compensated employees (NHCEs) who benefit under the plan divided by the ABP for highly compensated employees (HCEs) who benefit under the plan. The ABP for NHCEs equals the sum of benefit accrual rates for NHCEs in the plan divided by the total number of non-excludable NHCEs. The ABP for HCEs equals the sum of benefit accrual rates for HCEs in the plan divided by the total number of non-excludable HCEs.

	#	HCEs Benefit %	HCEs Product	#	NHCEs Benefit %	NHCEs Product
Plan A	5	7%	35%	10	6%	60%
Plan B				25	2%	50%
Plan C						
Plan D	5	4%	20%	10	2%	20%
Plan E	5	5%	25%	10	4%	40%
Plan F				25	3%	75%
Totals			80%			245%

The ABP for NHCEs equals 245% divided by 35 employees, or 7.0%. The ABP for HCEs equals 80% divided by 5 employees, or 16.0%. The average benefit percentage test gives 7/16 = 43.75%.

Answer is A

Problem 17

For waivers granted prior to 1988, a 15 year amortization period should be used (use 5 years for waivers after 1987). One of the general conditions of the exam states that the interest rate used to calculate the amortization of a waiver should be based on the valuation interest rate. In this problem you are given several interest rates to amortize the waiver, which should be the value of 150% of the FMR.

If the waiver interest rate is constant, you can write down the formula for the answer. Assume that the waiver rate is j, and the valuation interest rate is i:

End of year waiver amortization = W $= (1+j) * 70{,}000 \div \ddot{a}_{\overline{5}|j}$

Waiver outstanding base (waiver rate) after n years (n<5) $= 70{,}000\,(1+j)^n - W\,s_{\overline{n}|j}$

Waiver outstanding base (valuation rate) after n years (n<5) $= 70{,}000\,(1+i)^n - W\,s_{\overline{n}|i}$

Accumulated reconciliation account balance after n years (n<5):

$$[70{,}000\,(1+j)^n - W\,s_{\overline{n}|j}] - [\,70{,}000\,(1+i)^n - W\,s_{\overline{n}|i}\,]$$

Since the waiver rate changes each year, you must write down the waiver outstanding bases at the waiver rate and valuation rate each year. You also must recalculate the end of year waiver amortization amount each year.

Year	Waiver rate	01/01 Waiver base at waiver rate	Remaining Amortization period	12/31 amortization at waiver rate	01/01 Waiver base at 7% valuation rate
1994	13%	70,000	5	19,902	70,000
1995	14%	59,198	4	20,317	54,998
1996	15%	47,169	3	20,659	38,531
1997		33,585			20,569

The final accumulated reconciliation account balance is 33,585 - 20,569 = 13,016.

Answer is D

Problem 18 - Page 1 **Revised 09/23/98**

This problem is a typical complicated §415 question. This is a top-heavy plan, which normally means that the §415(e) DB and DC fraction denominators would be reduced. For a plan whose top heavy fraction exceeds 90% (or is top heavy and does not provide the top heavy minimums), the dollar limit will be multiplied by 1.00 instead of 1.25.

In §416, the top heavy minimum benefit accrual rate is 2% times years of top heavy service. This must be increased to 3% in order to use the 125% denominator under §415(e). Since the plan's normal retirement benefit of 90% of three year compensation exceeds the top heavy minimum, you can use the 125% denominators under §415(e). The DC plan contribution rate greater than 7.5% also allows use of the 125% denominators.

Since the problem states that the DB plan benefit will be reduced if the §415 limits are exceeded, the maximum DB plan fraction equals one minus the DC fraction. You must calculate the DC fraction, and "back into" the maximum projected benefit under the DB plan.

The first step is determination of the DC fraction under §415(e). Since the DC plan was established subsequent to Smith's hire date, you can include the two years prior to plan inception in the DC fraction denominator (see §415(e)(3)(B), which refers to "each prior year of service with the employer").

Earnings under §415 is defined as taxable compensation. Earnings under §415 is not subject to the §401(a)(17) limit of 150,000. Note that the employer's money purchase plan contribution is calculated as 10% of total compensation, limited by §401(a)(17).

	(1) Total Comp.	(2) 35% Pay: 1.40*25% .25 * (1)	(3) 1.25* 30,000	(4) Lesser of (2), (3)	(5) Total Pay Limited by 401(a)(17)	(6) Annual Additions .10 * (5)
1990	105,000	36,750	37,500	36,750	105,000	-0-
1991	110,000	38,500	37,500	37,500	110,000	-0-
1992	115,000	40,250	37,500	37,500	115,000	11,500
1993	120,000	42,000	37,500	37,500	120,000	12,000
1994	125,000	43,750	37,500	37,500	125,000	12,500
1995	135,000	47,250	37,500	37,500	135,000	13,500
1996	145,000	50,750	37,500	37,500	145,000	14,500
1997	155,000	54,250	37,500	37,500	150,000	15,000
1998	165,000	57,750	37,500	37,500	150,000	15,000
1999	175,000	61,250	37,500	37,500	150,000	15,000
				374,250		109,000

Problem 18 - Page 2

The resulting DC fraction is 109,000 ÷ 374,250 = .2912. The maximum allowable DB fraction equals 1 - .2912 = .7088.

You should be wary of a calculation that shows a DB fraction that exceeds 80%. For a non-top heavy plan, the largest possible DB fraction under §415(e)(2) is 1/1.25 = .8000. This results from a projected benefit equal to the DB plan dollar maximum. If the 100% FAE3 limit applied, then the DB fraction is 1/1.40 = .7143. For a top heavy plan, the largest possible DB fraction could be 1.00.

At 01/01/2000

Age	65	Birth date	1/1/35
Service	10 years	Hire date	1/1/90
Participation	8 years	Effective date	1/1/92

Projected benefit at age 65 = (150,000 + 150,000 + 150,000) * .9 / 3
= 135,000

The §415(b)(1)(B) compensation limit is reduced for service less than ten years. The compensation under §415 is <u>not</u> limited by §401(a)(17).

Age 65 100% 3 year comp. §415 limit = (155,000 + 165,000 + 175,000) / 3
= 165,000

Under §415(b), the reduction on the dollar limit is based on years of participation.

Social Security Retirement Age = 65 since born in 1935
Age 65 §415 dollar limit = 120,000 * (8/10)
= 96,000

Ignoring the effects of §415(e), Smith's benefit of 135,000 would be limited to the lesser of 165,000 and 96,000, which equals 96,000. Under §415(e), the reduction on the dollar limit in the denominator is based on years of service, <u>not</u> years of participation.

$$\text{DB fraction} = .7088 = \frac{\text{Final projected benefit}}{[\text{ lesser of } 1.25(120{,}000) \text{ or } 1.40(165{,}000)]}$$

Max. projected benefit = .7088 [1.25*(120,000)]
= 106,313

Since the resulting maximum benefit is greater than the previously calculated maximum of 96,000, the final maximum benefit is 96,000.

Answer is D

Problem 19 - Page 1 **Revised 09/13/99**

In some §404 problems, the hardest thing to get straight is which valuation corresponds to which tax year. Usually you are only given one set of valuation results, which is based on the correct valuation date.

The deductible limit for the taxable year ending 09/30/96 is based on the valuation for the plan year beginning in that tax year. The 01/01/96 valuation should be used to determine the deductible limit needed for the answer to this problem.

The first step should be to calculate the normal cost plus limit adjustments. The only ten year amortization bases are the initial accrued liability and the 1995 loss. The only potential trick to the problem is that you should not amortize the OBRA Full Funding credit base when calculating the deductible limit. This base was set up to restore the equation of balance under §412, and has no meaning under §404.

The deductible limit is the normal cost plus limit adjustments brought forward with interest to the earlier of the end of the plan year, or the end of the tax year, which is 09/30/96:

Limit adjustment = (500,000 - 65,000) / $\ddot{a}_{\overline{10}|.07}$ = 57,882

Deductible limit = (60,000 + 57,882) * (1.0525) = 124,071

The second step is usually to check the Full Funding Limitation under §404. Since you have no market value of assets, you can't check the Full Funding Limitation. With an experience gain, it is unlikely that the minimum contribution would exceed 124,071. The last step is to complete the 1996 Minimum Funding Standard Account:

IAL amortization = 500,000 / $\ddot{a}_{\overline{30}|.07}$ = 37,657

Gain amortization = 65,000 / $\ddot{a}_{\overline{5}|.07}$ = 14,816

OBRA FFC amortization = 30,000 / $\ddot{a}_{\overline{10}|.07}$ = 3,992

1996 Minimum Funding Standard Account

Charges		Credits	
Normal Cost	60,000	Credit Balance	5,000
IAL amortization	37,657	Gain amortization	14,816
FFC amortization	3,992	12/31 contrib	124,071
7% interest	7,115	7% interest	1,387
Total charges	108,765	Total credits	145,274

Problem 19 - Page 2

The credit balance is 145,274 - 108,765 = 36,509. If the result was a deficiency instead of a credit balance, then the minimum contribution would have produced a greater deductible limit than 124,071. Then you would revise the MFSA based on having paid and deducted the minimum, which would produce a zero credit balance.

Answer is B

If you used compound interest, the deductible limit would be 124,018. The resulting credit balance would be 36,458, which is in the same answer range.

Problem 20

A 70% contribution decline occurs when 30% of "units in the high base year" exceeds the units in each year of the "three year testing period". The "three year testing period" includes the year that the 70% decline occurs as the last year. The "units in the high base year" is the average of the two highest years in five years preceding the "three year testing period".

You must calculate the various items to see when a 70% decline has occurred:

Assumed year	**1990**	**1991**	**1992**	**1993**
3 year testing period	1988-1990	1989-1991	1990-1992	1991-1993
Highest units in 3 year testing period	85,000	85,000	85,000	70,000
Base years	1983-1987	1984-1988	1985-1989	1986-1990
High base years	1983, 1984	1984, 1985	1985, 1986	1986, 1987
Units in high base year	.5*(275,000 + 260,000) = 267,500	.5*(260,000 + 250,000) = 255,000	.5*(250,000 + 245,000) = 247,500	.5*(245,000 + 240,000) = 242,500
30% of units in high base year	80,250	76,500	74,250	72,750
70% decline occurred?	NO	NO	NO	YES

To calculate the partial withdrawal liability due to a 70% contribution decline,

(1) Initial year of the three year testing period is considered as the year of withdrawal for calculation of employer share of UVB

(2) The fraction to multiply the "complete withdrawal" liability by is

$$1.0 - \frac{\text{Base units for plan year following last year of three year testing period}}{\text{Average base units during 5 yr. period preceding three year testing period}}$$

$$= 1.0 - \frac{55{,}000}{20\% * (245{,}000 + 240{,}000 + 70{,}000 + 80{,}000 + 85{,}000)}$$

$$= 1 - 55 / 144$$

$$= .6181$$

answer is A

Problem 21 - Page 1 **Revised 06/20/06**

Since the 1/1/94 funded current liability percentage is 100%, there were no required quarterly contributions for 1995. To calculate the required quarterly contribution for 1996, you must first calculate the required annual payment (RAP). This is the lesser of last year's minimum required contribution or 90% of this year's. These numbers are both interest adjusted to the first day of this plan year, and they both would not reflect any credit balance.

12/31/95 "MFSA excluding CB" = (140,000+35,000) * 1.07 = 187,250
01/01/96 "MFSA excluding CB" = (125,000+35,000) = 160,000

Lesser of 1995 or 90% of 1996 = Lesser of (187,250 or .90 * 160,000) = 144,000

The required quarterly installment is based on the applicable percentage multiplied by the RAP, which is 25%(144,000) = 36,000.

You may use the credit balance at 01/01/96 like an employer contribution for the required quarterly installment, but only if the contribution that creates the credit balance is actually in the trust fund at 01/01/96. The problem states that the contribution for 1995 was paid at 12/31/95, so you can use the credit balance.

Date	Required	Amount Available	Overpayment (Underpayment)
04/15/96	36,000	50,000 * [1+ (.07)*(3.5/12)] = 51,021	51,021 - 36,000 = 15,021
07/15/96	36,000	15,021 * [1+ (.07)*(3/12)] +80,000 = 95,284	95,284 - 36,000 = 59,284
10/15/96	36,000	59,284 * [1+ (.07)*(3/12)] = 60,321	60,321 - 36,000 = 24,321
01/15/97	36,000	24,321 * [1+ (.07)*(2.5/12)] = 24,676	24,676 - 36,000 = (11,324)

The required payment at 01/15/97 to avoid an interest penalty is 11,324. Note that interest at the valuation rate is only credited to the end of the plan year.

Answer is D

Problem 21 - Page 2

Compound interest is "harder". Since the time period is less than one year, it produces a larger required payment:

Date	Required	Amount Available	Overpayment (Underpayment)
04/15/96	36,000	50,000 * $(1.07)^{3.5/12}$ = 50,996	50,996 - 36,000 = 14,996
07/15/96	36,000	14,996 * $(1.07)^{3/12}$ + 80,000 = 95,252	95,252 - 36,000 = 59,252
10/15/96	36,000	59,252 * $(1.07)^{3/12}$ = 60,263	60,263 - 36,000 = 24,263
01/15/97	36,000	24,263 * $(1.07)^{2.5/12}$ = 24,607	24,607 - 36,000 = (11,393)

The resulting payment is in the same range, as it must be!

Problem 22 **Revised 11/23/98**

With an aggregate type cost method, you would need both the market value of assets, and EAN valuation results to check the Full Funding Limitation. Since you have both, you should calculate the FFL values.

The problem asks for the deductible limit for 1996, which you would normally calculate as normal cost plus limit adjustments. Under the Aggregate method, the normal cost plus limit adjustments is simply the normal cost of 90,000. With an end of year valuation date, this value is already at the end of the plan year.

The next step is to check the Full Funding Limitation under §404. This is the first problem where the RPA '94 Full Funding Limitation applies :

§404 "ERISA" FFL = (1+i)*(PUC AL + NC - (lesser MVA,AAV))
= 920,000 - 860,000
= 60,000

§404 "OBRA" FFL = 1.50 (12/31 CL) - (1+i)*(lesser MVA,AAV))
= 1.50*900,000 - 860,000
= 490,000

§404 "RPA94" FFL = .90 (12/31 CL) - (1+i)*(AAV)
= .90*1,040,000 - 870,000
= 66,000

Note that the end of year asset value (if any) should be used in calculating the OBRA and RPA '94 FFL. The reason is that any benefit payments during the year should be reflected at the valuation rate in the assets, and presumably are included in the end of year value. They would be accumulated at the current liability interest rate in the end of year current liability value.

The final §404 FFL value is the greater of the RPA '94 floor, and the lesser of the ERISA and OBRA FFL values, or 66,000.

The §412 minimum contribution should equal the normal cost of 90,000. The FFL under §412 should be identical to the §404 FFL, since the credit balance is zero. As a result, there is a Full Funding credit in the minimum funding standard account. The §412 minimum contribution also equals the FFL value of 66,000.

Since this plan has always had less than 100 participants, the plan sponsor is not eligible for the deductible limit based on the Unfunded Current Liability. The final deductible limit is 66,000, which equals the §404 FFL, the §412 FFL, and the §412 minimum.

Answer is C

Problem 23 - Page 1

Earnings under §415 is defined as taxable compensation. Earnings under §415 is not subject to the §401(a)(17) limit of 150,000.

At 01/01/96

Age	57	Birth date	1/1/39
Service	23 years	Hire date	1/1/73
Participation	23 years	Effective date	1/1/70
		Normal retirement age	62

Accrued benefit at age 57	=	150,000 * .0275 * 23
	=	94,875
Early retirement benefit at age 57	=	94,875 * [1 - .07 * 5]
	=	61,669

The §415(b)(1)(B) compensation limit is reduced when service is less than ten years.

Age 57 100% 3 year comp. §415 limit = 150,000

Under §415(b), the dollar limit is reduced when participation is less than ten years.

Social Security Retirement Age	=	66 since born in 1939
§415 dollar limit during 1995	=	120,000 at age 66
§415 dollar limit at age 65	=	120,000 * .9333
§415 dollar limit at age 64	=	120,000 * .8667
§415 dollar limit at age 63	=	120,000 * .8000
§415 dollar limit at age 62	=	120,000 * .7500 = 90,000

§415(b)(2)(E)(i) says to use the greater of 5% and the interest rate specified in the plan to reduce the §415 dollar limit prior to age 62. The examples in Revenue Ruling 95-29 clarify what is done in the absence of a specified interest and mortality rate in the plan document for optional form conversion. The §415 dollar limit is reduced using the lower of the factor calculated based on the mandated mortality and interest rate, and the early retirement factor on the plan basis.

Problem 23 - Page 2 **Revised 11/23/98**

In this problem, you are given the "N/N" factors on the mandated basis. The plan basis is the 5% per year reduction from age 62.

Actuarial reduction from 62 to 57	= $N_{62}^{(12)} / N_{57}^{(12)}$	
(mandated basis)	= 5,567 / 8,148	= .683235
Actuarial reduction from 62 to 57		
(plan basis)	= [1 - .07 * 5]	= . 650000
§415 dollar limit at age 57	= 90,000 * lesser of [.650000, or .683235]	
	= 58,500	

Smith's benefit of 61,669 is limited to the lesser of 150,000 and 58,500, which equals 58,500.

Answer is D

Problem 24 **Revised 11/23/98**

Revenue Procedure 95-51 contains the rules for setting up a new amortization base when there is a change in cost method. Section 5.01 of Revenue Procedure 95-51 specifies that certain bases must be maintained regardless of the funding method that is used. These bases include waivers, shortfall gains and losses, switchback from AMFSA, and the OBRA Full Funding credit base.

The calculation of the normal cost under the Aggregate method must satisfy the formulas that are applicable to all reasonable funding methods (see the regulations at §1.412(c)(3)-1):

Except under the Aggregate method

PV Future Normal costs = PV Future Benefits - Actuarial Assets
- (O/S §412 amortization bases - credit balance - ARA)

For cost methods with Unfunded Actuarial Liabilities, this can be restated as UAL = O/S 412 bases - credit balance - ARA. You must determine the new base such that the equation of balance is satisfied.

Entry Age UAL = 12-31-95 O/S bases - CB - ARA
Unit Credit UAL = 12-31-95 O/S bases + Method change base - CB - ARA

Method change base = Unit credit UAL - Entry Age UAL
= 250,000 - 100,000
= 150,000

The amortization period for all cost method change amortization bases specified in Revenue Procedure 95-51 is 10 years:

Method change amortization = 150,000 / $\ddot{a}_{\overline{10}|.07}$ = 19,959

1996 Minimum Funding Standard Account

Charges		**Credits**	
Normal Cost	60,000	Credit Balance	5,000
Net amortization	25,000		
Method amortization	19,959	12/31 contrib	x
7% interest	7,347	7% interest	350
Total charges	112,307	Total credits	x + 5,350

The minimum contribution payable 12/31/96 is 112,307 - 5,350 = 106,957.

Answer is D

Problem 25

I. FALSE

See ERISA regulation §2520.102-2(c)(2)

You can provide "an English-language summary plan description which prominently displays a notice, in the non-English language common to these participants, offering them assistance. The assistance provided need not involve written materials …"

II. TRUE

See ERISA regulation §2520.102-3(j)(1)

There is no requirement for example benefit calculations. "Such plan benefits shall be described or summarized."

III. TRUE

See ERISA regulation §2520.102-4

"… the plan administrator may … furnish … to each member of each class … a copy of a summary plan description appropriate to that class."

II and III are true

Answer is C

Problem 26 - Page 1

Revenue Ruling 81-212 contains acceptable methods used to allocate Minimum Funding Standard Account items when a plan in spun off into two or more plans. This problem tests the method used to allocate the outstanding amortization bases upon spinoff. Revenue Ruling 86-47 contains different rules which must be used when the market value of assets exceeds the present value of benefits on a termination basis (before the plan is spun off), and when one of the spun off plans has a zero UAL.

The method of allocation is based on the fact that, for a plan with a non-zero UAL, the outstanding 412 amortization bases less the credit balance equals the UAL. At the date of spinoff, the present value of benefits on a termination basis is used to allocate the market value of assets to the spun off plans. The Accrued Liability under the cost method is calculated for each of the plans. In this problem, you are given the allocated credit balance, and you must allocate the outstanding 412 amortization bases between the plans.

Under the FIL method, the UAL is written down each year based on the formula for the expected UAL. At plan spinoff, the Entry Age Normal accrued liability is used to develop an allocation weight. This takes the accumulated experiences gains and losses of the spun off populations into account. The EAN AL is used to allocate the sum of the UAL and AAV, which is termed the "FIL accrued liability" in the revenue ruling. The market value of assets is used to allocate the AAV between the two plans. The difference between the allocated "FIL AL" and the allocated AAV is the allocated UAL. The O/S 412 amortization bases must equal the sum of the allocated UAL and the allocated credit balance.

UAL = O/S 412 bases - CB
= 400,000 - 50,000
= 350,000

"FIL AL" = UAL + AAV
= 350,000 + 250,000
= 600,000

			Plan A	Plan B	Plan C
(1)	Given	EAN AL	550,000	360,000	190,000
(2)	Allocated by (1)	FIL AL	600,000	392,727	207,273
(3)	Given	Allocated AAV	250,000	150,000	100,000
(4)	(2) minus (3)	UAL = AL - AAV	350,000	242,727	107,273
(5)	Given	Credit balance	50,000	30,000	20,000
(6)	(4) plus (5)	O/S bases	400,000	272,727	127,273

The calculations for Plan B are not strictly necessary, but they do allow you to check that the figures add to the correct total.

Problem 26 - Page 2

Now you must set up the minimum funding standard account for Plan C. The amortization period for the remaining amortization bases for the Initial Accrued Liability is 20 years (30 - (96 - 86)). This produces an amortization payment of 11,228:

IAL amortization = $127{,}273 / \ddot{a}_{\overline{20}|.07} = 11{,}228$

1996 Minimum Funding Standard Account

Charges		**Credits**	
Normal Cost	28,000	Credit Balance	20,000
IAL amortization	11,228	12/31 contrib	x
7% interest	2,746	7% interest	1,400
Total charges	41,974	Total credits	x + 21,400

The minimum contribution payable 12/31/96 is 41,974 - 21,400 = 20,574.

Answer is B

Problem 27 - Page 1 **Revised 06/18/02**

This problem is one of the first on the Optional Rule. For plans which elect the Optional Rule, the amount of the 412(l) additional funding charge should be the greater of the values calculated under the post-GATT and pre-GATT rules. This problem gives you the values of the Deficit Reduction Contribution defined under both sets of rules.

Under the pre-GATT rules, the MFSA charges should be increased by the Unpredictable Contingent Event amount plus the excess, if any, of the DRC over the §412(b) amortization charges and credits, excluding the normal cost, and excluding amortization of G/L, assumption changes, and cost method changes. Under the post-GATT rules, the MFSA charges should be increased by the Unpredictable Contingent Event amount plus the excess, if any, of the DRC over the §412(b) normal cost plus all amortization charges and credits.

Each §412(l) charge should be limited to the Unfunded Current Liability of 350,000. Then you must bring the §412(l) charge forward to the end of the year with interest at the current liability rate:

12/31/96 pre-GATT §412(l) charge = 1.0762 * (84,175 - 50,000)
= 1.0762 * 34,175 = 36,779

12/31/96 post-GATT §412(l) charge = 1.0762 * (186,222 - [85,000+50,000+20,000])
= 1.0762 * 31,222 = 33,601

With 150 plan participants, you don't need to pro-rate the additional §412(l) charge. The final value is the greater of the two, or 36,779.

The final step is completing the MFSA for 1996. This is relatively easy, since you are given all the amortization values. One thing to beware of is that the §412(l) AFC should not get any interest, since you already adjusted it to the end of the plan year with the current liability interest rate.

1996 Minimum Funding Standard Account

Charges		**Credits**	
Normal Cost	85,000	Credit Balance	-0-
Amend. Amort.	50,000		
Loss amortization	20,000	12/31 contribution	x
8% interest	12,400		
12/31 §412(l) AFC	36,779	8% interest	-0-
Total charges	204,179	Total credits	x

At 12/31/96, the minimum contribution should be 204,179. With the market value of assets, you should check whether the FFL applies.

Problem 27 - Page 2

The next step is to check the Full Funding Limitation under §412, which does not apply.

§412 "ERISA" FFL = (1+i)*(PUC AL + NC - (lesser MVA,AAV - CB))
= (1.08)*(900,000 + 85,000 - (500,000-0))
= 523,800

With no end of year current liability, and no way to derive the value of the current liability normal cost, you can not check the OBRA or RPA '94 Full Funding Limitation values. Based on the Unfunded Current Liability of 350,000, it is unlikely either FFL would apply.

Answer is B

Problem 28 **Revised 11/23/98**

For a benefit payable at Social Security Retirement Age (SSRA), the maximum permitted disparity (X) is 0.75%. Since you will have employees with all three SSRA values, you should base your calculations on those with SSRA=67, since that will produce the lowest benefits, and the smallest value of X.

With the 10 year certain and life normal form, you will have to reduce the maximum permitted disparity (MPD) factors at each age. The adjustment factors will be 1.06 at each age.

In addition, you have to increase the MPD factors to allow for early retirement reductions. The worst case example is someone who retires at age 62, since this produces the smallest result, which is the largest allowable value for X.

Since the benefit formula accrues service beyond 35 years, you have to adjust the MPD on a pro-rata basis. The reason is that there is a cumulative permitted disparity limit, and the MPD is based on a maximum of 35 years of accruals. See 1.401(l)-5(c)(1), which defines the cumulative permitted disparity limit.

Age	(1) SSRA 67 MPD	(2) Normal Form	(3) (1) / (2) Adjusted	(4) Early Retirement Factor	(5) (4) / (5) Adjust: ERF	(6) (5) * 35 / 40 Adjust: svc
67	0.750	1.06	0.7075	1.00	.7075	.6191
66	0.700	1.06	0.6604	1.00	.6604	.5778
65	0.650	1.06	0.6132	1.00	.6132	.5366
64	0.600	1.06	0.5660	0.95	.5958	.5214
63	0.550	1.06	0.5189	0.90	.5765	.5045
62	0.500	1.06	0.4717	0.85	.5549	.4856

Answer is B

Problem 29 - Page 1

Revenue Procedure 95-51 contains the rules for setting up a new amortization base when there is a change in cost method. Section 5.01 of Revenue Procedure 95-51 specifies that certain bases must be maintained regardless of the funding method that is used. These bases include waivers, shortfall gains and losses, switchback from AMFSA, and the OBRA Full Funding credit base.

With an aggregate type cost method, you would need both the market value of assets, and EAN valuation results to check the Full Funding Limitation. Since you have no EAN valuation results, you can't calculate the Full Funding Limitation.

You need to set up the 1995 MFSA to derive the credit balance for the 1996 MFSA:

Amortization base	Original Base	Amortization
1-1-86 IAL base	750,000	$56{,}486 = 750{,}000 / \ddot{a}_{\overline{30}\rceil .07}$
1-1-95 Assump base	80,000	$10{,}645 = 80{,}000 / \ddot{a}_{\overline{10}\rceil .07}$

1995 Minimum Funding Standard Account

Charges		Credits	
Normal Cost	75,000	Credit Balance	-0-
IAL amortization	56,486		
Assump amortization	10,645	12/31 contribution	40,000
7% interest	9,949	7% interest	-0-
Total charges	152,080	Total credits	40,000

At 12/31/95, the deficiency is 152,080 - 40,000 = 112,080. You are told that 60,000 of this is waived for 1996, and you should assume the remaining debit balance of 52,080 is paid off during 1996 as part of the minimum contribution.

Problem 29 - Page 2 **Revised 09/23/98**

The calculation of the normal cost under the Aggregate method must satisfy the formulas that are applicable to all reasonable funding methods (see the regulations at §1.412(c)(3)-1):

Except under the Aggregate method

PV Future Normal costs = PV Future Benefits - Actuarial Assets
- (O/S §412 amortization bases - credit balance - ARA)

PVNC = PVFB - AAV - O/S bases - DB
= 2,000,000 - 950,000 - 60,000 - 52,080
= 937,920
PVE/E = 3,000,000 / 300,000 = 10.00
NC = 937,920 / 10.00
= 93,792

Now you can set up the 1996 MFSA. All the old amortizations are eliminated, and the only remaining amortization is for the waiver base, at the 13% interest rate.

Amortization base	Original Base	Amortization
1-1-96 Waiver base	60,000	15,096 = 60,000 / $\ddot{a}_{\overline{5}\vert .13}$

To avoid "interest confusion" in the MFSA, it is a good idea to use an end of year amortization for the waiver, which is 1.13(15,096) = 17,058. Then you should credit 7% interest on all the other MFSA charges.

1996 Minimum Funding Standard Account

Charges		Credits	
Debit balance	52,080	Credit Balance	-0-
Normal Cost	93,792	12/31 contribution	x
7% interest	10,211	7% interest	-0-
12/31 Waiver amortization	17,058		
Total charges	173,141	Total credits	x

The minimum contribution at 12/31/96 is 173,141.

Answer is E

Problem 30 **Revised 09/23/98**

For any plan, the Top Heavy determination date is the last day of the preceding plan year. An exception to this is the first plan year, when the determination date is the last day of the first plan year. For this problem the calculation is made at 12/31/95.

You should add together the present value of vested and non-vested accrued benefits and the account balances as of that date for all participants and the key employees. These amounts should include distributions within the five years preceding the determination date. The amounts should exclude values for terminated employees who have not been employed in the last 5 years, or values for former key employees.

If the ratio of key employee values to total values exceeds 60%, the plan is Top Heavy. If the ratio exceeds 90%, the plan is super Top Heavy.

A key employee includes anyone who satisfied the definition in the five years preceding the determination date. The definition of a key employee includes the following employees under 416(i)(1)(A):

(i) an officer with compensation greater than 50% of the 415(b)(1)(A) dollar limit (e.g., 50% of $120,000)
(ii) one of the ten employees with compensation greater than the 415(c)(1)(A) dollar limit ($30,000) owning the largest interests in the employer
(iii) a 5% owner
(iv) a 1% owner with more than $150,000 compensation

The two employees Smith and Brown are identified as key employees. The trick to this question is the handling of Smith, who retired at 1/1/94, and who should be included in the calculation. You must treat each year's benefit payments of 32,000 as distributions, and add the value back when calculating the Top Heavy ratio.

The account balances for the key employees are

1,229,000 = 300,000 + 500,000 + 2*32,000 (Smith) + 220,000 + 145,000 (Brown)

The account balances for the non-key employees are

88,000 = 30,000 + 35,000 (Green) + 15,000 + 8,000 (Jones)

The Top heavy ratio at 12/31/95 is

93.32% = 1,229 / (1,229 + 88)

Answer is C

Problem 31 - Page 1 **Revised 06/20/06**

You can calculate the 1/1/95 funded current liability percentage to see if there are any required quarterly contributions for 1996. Based on Revenue Ruling 95-31, the assets are not reduced by the credit balance for this purpose. The result is 380,000/400,000, which is 95.00%. Since this is less than 100%, quarterly contributions are required for 1996 .

The problem asks for the minimum final 1995 contribution at 4/15/96 to avoid any required quarterly contribution at 4/15/96. The best interpretation of this statement is that the credit balance created at 12/31/95 will satisfy the required quarterly contribution at 4/15/96.

To calculate the required quarterly contribution for 1996, you must first calculate the required annual payment (RAP). This is the lesser of last year's minimum required contribution or 90% of this year's. These numbers are both interest adjusted to the first day of this plan year, and they both would not reflect any credit balance.

12/31/95 "MFSA excluding CB"	=	(50,000 + 25,000) * 1.08	= 81,000
01/01/96 "MFSA excluding CB"	=	(55,000 + 30,000)	= 85,000
Lesser of 1995 or 90% of 1996	=	Lesser of (81,000 or .90 * 85,000)	= 76,500

The required quarterly installment is based on the applicable percentage multiplied by the RAP, which is 25%(76,500) = 19,125.

The next step is to derive the amount of the credit balance at 12/31/95 based on the payment of the 1995 required quarterly installment of 16,875. Then you can solve for the amount of the final 1995 contribution at 4/15/96.

1995 Minimum Funding Standard Account

Charges		Credits	
Normal Cost	50,000	Credit Balance	5,000
IAL amortization	25,000	Contributions	67,500
8% interest	6,000	8% interest	2,224
Total charges	81,000	Total credits	74,724

The compound interest on the quarterly contributions is calculated as

$$16{,}875\ [\ (1.08)^{8.5/12} + (1.08)^{5.5/12} + (1.08)^{2.5/12} + (1.08)^{0/12} - 4\ ] = 1{,}824$$

With no contribution at 4/15/96, the MFSA would have a debit balance of 6,276 at 12/31/95. You need to derive the amount of contribution at 04/15/96 that creates a credit balance at 12/31/95 that will satisfy the 04/15/96 quarterly contribution requirement.

Problem 31 - Page 2 **Revised 07/06/00**

You may use the credit balance at 01/01/96 like an employer contribution for the 4/15/96 required quarterly installment, but only if the contribution that creates the credit balance is actually in the trust fund at 4/15/96. The problem states that the final contribution for 1995 is paid at 4/15/96, so you can use the credit balance to satisfy the 4/15/96 required quarterly installment.

The question asks what the final 1995 contribution should be at 4/15/96 to satisfy the first quarterly contribution requirement for 1996 at 4/15/96. This means that the 12/31/95 credit balance, when brought forward with interest, must equal 19,125. The desired credit balance is 19,125 brought back to 12/31/95 with interest:
$19{,}125 / (1.08)^{3.5/12} = 18{,}700$

Now you should set up the 1995 MFSA assuming a final contribution of "X" at 4/15/96, and solve for the 12/31/95 credit balance. The 1995 MFSA charges are 81,000, and the credits are X + 74,724.

The difference between the 81,000 and the 74,724 is a debit balance of 6,276. So you have X – 6,276 as the 12/31/95 credit balance, which must equal the 18,700 previously calculated. The final result is X = 24,976.

Answer is B

Simple interest calculations

The 12/31/95 debit balance is 6,244.The interest on the quarterly contributions is calculated as

16,875 [(.08*8.5/12) + (.08*5.5/12) + (.08*2.5/12)] = 1,856

(X - 6,244) = 19,125 / (1+.08*3.5/12)
X - 6,244 = 18,689
X = 24,933

Problem 32 - Page 1

With an individual type cost method, you should always check if experience gains and losses have occurred, and if the Full Funding Limitation (FFL) applies.

You have no market value of assets, so you can't check the FFL. You are given the experience loss for the initial 1995 plan year, so you don't need to calculate any G/L.

1995 deductible limit

The initial calculation of the deductible limit is the normal cost plus limit adjustments brought forward with interest to the earlier of the end of the plan year, or the end of the tax year. You are told to use the 01/01/95 valuation results to determine the deductible limit for the tax year ending 06/30/95. You should credit six months interest on the normal cost plus limit adjustments.

$$\text{Limit adjustment} = \text{IAL} \;/\; \ddot{a}_{\overline{10}|.07}$$
$$= 450{,}000 \;/\; 7.5152$$
$$= 59{,}878$$

$$\text{Deductible limit} = (\,44{,}000 + 59{,}878\,) * [\,1 + (6/12)*(.07\,)\,]$$
$$= 107{,}514$$

The minimum contribution does not produce a greater deductible limit. With no other information, the final deductible limit is 107,514.

1996 deductible limit

$$\text{Limit adjustment} = \text{Loss} \;/\; \ddot{a}_{\overline{10}|.07} + \text{IAL} \;/\; \ddot{a}_{\overline{10}|.07}$$
$$= 15{,}000 \;/\; 7.5152 + 59{,}878$$
$$= 61{,}874$$

$$\text{Deductible limit} = (\,47{,}000 + 61{,}874\,) * [\,1 + (6/12)*(.07\,)\,]$$
$$= 112{,}685$$

With a newly established plan, a large credit balance, and a relatively small loss, it is unlikely that the minimum contribution would produce a greater deductible limit. With no other information, the final deductible limit is 112,685.

Problem 32 - Page 2 **Revised 07/08/05**

You should note that the contribution paid for 1995 exceeded the deductible limit. The non-deducted contribution for 1995 is 115,000 - 107,514 = 7,486.

Any contributions between 04/30/96 and the 03/15/97 tax filing date are eligible for deduction. The potential deduction for 1996 is the sum of the cash contribution of 115,000 at 04/30/96, and the non-deducted contribution of 7,486 at 07/01/95, which equals 122,486.

Since this amount exceeds the deductible limit of 112,685, the amount of the non-deductible contribution for 1996 is 122,486 - 112,685 = 9,801. The 10% excise tax on the non-deductible contribution is 980.

Answer is D

Compound interest calculations

1995	Deductible limit	107,452
1995	Non-deductible contrib.	7,548
1996	Deductible limit	112,620
1996	Potential deduction	122,548
1996	Non-deductible contrib.	9,928
1996	Excise tax	993

Problem 33 - Page 1

The entry age normal cost method is an individual cost method. You must be careful to calculate gains and losses each year. You are told that there is a zero credit balance in the AMFSA at 12/31/94. This means that the minimum contribution was paid for 1994:

Alternative Minimum Funding Standard Account - 1994

Charges		Credits	
Lesser of EA or UC Normal Cost	150,000		
Excess of UC AL over Market value	0	Contributions	x
7% interest	0	7% interest	0
Total charges	150,000	Total credits	x

The end of year value of the 1994 contribution was 150,000. Now you should check the amount of the deficiency in the regular MFSA at 12/31/94:

1994 Minimum Funding Standard Account

Charges		Credits	
Normal Cost	155,000	Credit Balance	0
IAL amortization	0	Contributions	150,000
7% interest	0	7% interest	0
Total charges	155,000	Total credits	150,000

The debit balance at 12/31/94 in the regular MFSA is 155,000 - 150,000 = 5,000. Next, you should determine the minimum contribution for 1995 based on the AMFSA:

Alternative Minimum Funding Standard Account - 1995

Charges		Credits	
Lesser of EA or UC Normal Cost	200,000		
Excess of UC AL over Market value	1,000	Contributions	x
7% interest	0	7% interest	0
Total charges	201,000	Total credits	x

The end of year value of the 1994 contribution was 201,000. Now you should check the amount of the deficiency in the regular MFSA at 12/31/95. To do that, you first must calculate the experience G/L from 12/31/94 to 12/31/95.

Problem 33 - Page 2 **Revised 11/23/98**

$12/95\ {}_eUAL_1 = (1+i)*(NC_0 + UAL_0) - (contrib + i)$
$= 1.07 * (155{,}000) - 1.07 * (150{,}000)$
$= 5{,}350$

12/31/95 UAL	=	195,000 - 165,000	=	30,000
Loss base	=	30,000 - 5,350	=	24,650
Amortization	=	5,619	=	$24{,}650 \div \ddot{a}_{\overline{5}\vert .07}$

The loss amortization is based on a five year period. Since the base is set up at 12/31/95, you should use an annuity due to calculate the 12/31 amortization payment. This is confusing!

To set up the MFSA for 1995, you must bring the debit balance forward with interest from 12/31/94 to 12/31/95.

12/31/95 DB = 1.07 * 5,000 = 5,350

1995 Minimum Funding Standard Account

Charges		**Credits**	
Debit balance	5,350	Credit Balance	0
Normal Cost	200,000		
Loss amortization	5,619	12/31 Contrib	201,000
7% interest	0	7% interest	0
Total charges	210,969	Total credits	201,000

When you switch back to the regular MFSA, the definition of the amount of the base is the excess of the debit balance in the regular MFSA over the debit balance in the AMFSA. This definition forces the plan sponsor to pay off any deficiency from the AMFSA immediately in the following year.

The debit balance at 12/31/95 in the regular MFSA is 210,969 - 201,000 = 9,969. Since it is first amortized in the 12/31/96 MFSA, the AMFSA switch-back amortization base is calculated as

12/31/96 base	=	9,969 * 1.07	=	10,667	=	12/31/96 debit balance
12/31/96 amort	=	2,431	=	$10{,}667 \div \ddot{a}_{\overline{5}\vert .07}$		

Answer is D

Problem 34 **Revised 01/10/01**

Revenue Procedure 95-51 contains the rules for setting up a new amortization base when there is a change in cost method. Section 5.01(1) of Revenue Procedure 95-51 specifies that certain bases must be maintained regardless of the funding method that is used. These bases include waivers, shortfall gains and losses, switchback from AMFSA, and the OBRA Full Funding credit base.

In general, the calculation of the normal cost must satisfy the formulas that are applicable to all reasonable funding methods (see the regulations at §1.412(c)(3)-1):

PV Future Normal costs = PV Future Benefits - Actuarial Assets
- (O/S §412 amortization bases - credit balance - ARA)

Except under the Aggregate method

Section 5.01(2) requires that you set up a new method change base such that the UAL = O/S 412 bases - credit balance - ARA. If you change to a method other than Aggregate, then you must determine the method change base so that the equation of balance is satisfied.

The main point of this problem is whether you know the amortization periods for multiemployer plans. These plans were not subject to the requirements of OBRA '87, so the amortization periods reflect the pre-OBRA '87 rules:

Amortization base	Amortization amount	Remaining years	Outstanding base
1-1-94 Initial AL	35,000	28 = 30-(96-94)	454,535 = 35,000 * $\ddot{a}_{\overline{28}\|.07}$
1-1-95 Loss base	4,000	14 = 15-(96-95)	37,431 = 4,000 * $\ddot{a}_{\overline{14}\|.07}$
1-1-95 Assump base	5,500	29 = 30-(96-95)	72,254 = 5,500 * $\ddot{a}_{\overline{29}\|.07}$
All Total			564,220

PUC UAL = O/S bases + Method - CB
450,000 = 564,220 + Method - 2,000
Method = 450,000 - 564,220 + 2,000 = -112,220

The amortization period for all cost method change amortization bases specified in Revenue Procedure 95-51 is 10 years.

Method amortization = -112,220 / $\ddot{a}_{\overline{10}\|.07}$ = -14,932

Answer is D

Problem 35 **Revised 06/18/02**

§404(a)(7)(A) of the IRC defines the overall deduction limitation for combinations of DB and DC plans. The limit is the greater of 25% of compensation, or the amount paid to the DB plans, not to exceed the minimum contribution requirement for the DB plan under §412. If the deductible limit for a year was based on the unfunded current liability, the deduction limitation would be no less than that amount.

First you should calculate the deductible limit for the DB plan for 1996. These calculations are somewhat simplified due to the 12/31 valuation date.

Normal cost plus limit adjustments	90,000 = 1.0*(90,000)
§404 ERISA full funding limitation	30,000 = 1.0*(40,000+710,000-720,000)
§404 OBRA full funding limitation	480,000 = 1.5(800,000) - 1.0(720,000)
§404 RPA94 full funding limitation	0 = 0.9(800,000) - 1.0(720,000)

Final 1995 deductible limit 30,000 = Lesser of 90,000 and
lesser of (30,000 and 480,000)

Since the §404 FFL applies, you do not need to calculate the §412 minimum. The rules are designed so the §412 minimum should be identical to the maximum when the §404 FFL applies. The unfunded current liability is not available, since there are less than 101 participants.

The profit sharing plan has a separate deduction limitation of 15% of taxable compensation. The maximum amount that could be contributed to the profit sharing plan is 15% of 320,000, which gives 48,000. The taxable compensation is calculated as follows:

	Smith	**Brown**	**Green**	**Jones**	**Total**
96 compensation	180,000	75,000	60,000	35,000	350,000
401(a)(17) Limit	150,000	75,000	60,000	35,000	320,000

Note: The taxable compensation is limited under 404(l), and the limit has the same value as the 401(a)(17) limit.

The overall deduction limitation is the greater of 25%(320,000) = 80,000, and the minimum contribution requirement for the DB plan, which should equal the §404 FFL of 30,000.

The sum of the deductible limits for the two plans is 30,000 + 48,000 = 78,000. Since this is less than the overall combined limitation, 78,000 is the combined deductible limit for both plans.

Answer is A

Problem 36

I. FALSE

See Part H of the instructions for the PBGC-1 form:

Subpart 5	Requirements for Filing Method Selection
Subpart a	General Rule The UVB is calculated as of the last day of the plan year preceding the premium payment year. There is no special rule for Collectively Bargained plans.
(i)	General Requirements You could perform valuation calculations at 01/01, and adjust the results "to reflect any differences in plan assets, population, and provisions between the different valuation dates and the last day of the plan year …"

II. TRUE

For non-disabled participants, the only available mortality and interest for calculation of the current liability is the mandated interest and mortality table. For disabled participants, there are two different mandated mortality tables that may be used, depending on the date of disability and the plan's definition of disability.

Revenue Ruling 95-28 contains the GAM-83 table (IRS) for current liability.
Revenue Ruling 96-7 contains the disabled mortality tables (IRS) for current liability.

III. FALSE

For plan years starting after 06/30/96, there is no longer a cap on the Variable Rate Premium calculation

II only is true

Answer is B

Problem 37 **Revised 01/10/01**

The whole point of the problem is the definition of earnings. Earned income is defined in §401(c)(2)(A)(v) as net earnings after allowing for the deduction under §404 for plan contributions.

The problem gives you the earned income before allowing for the deduction for plan contributions. Since 1996 is the first year of the plan, the net pensionable earnings are actually 102,500 - X, where X is the 1/1/96 minimum required contribution that is the answer to the problem.

Since the benefit is defined based on the high three year average, it could use years 1993-1995, 1994-1996, 1995-1997, and 1996-1998 (or later):

Starting year	Three year average				
1993	95,000 =	(	95,000 +	100,000 +	90,000) / 3
1994	97,500 - .3333X =	(	100,000 +	90,000 +	102,500 - X) / 3
1995	98,333 - .6667X =	(	90,000 +	102,500 - X +	102,500 - X) / 3
1996	102,500 - X =	(	102,500 - X +	102,500 - X +	102,500 - X) / 3

Based on the answer ranges, you can assume that X should be in the neighborhood of 15,500 (bottom of the "A" answer range) to 20,500 (top of the "E" answer range). Clearly the highest value for the three year average earned income is 95,000.

Under the Individual Aggregate cost method, each participant's normal cost is calculated using the formulas for the Aggregate method:

PVNC = PVB - AAV - (O/S §412 bases - CB)
NC = PVNC / (PVE / Earnings)

Since the plan was just established, the asset value, §412 bases and credit balance are zero.

Date of birth 01/01/53
01/01/96 age 43
Projected benefit 100% * 95,000
PV future benefits $[95{,}000 * 9.87 * (1.07)^{-22}]$
01/01 normal cost $\dfrac{[95{,}000 * 9.87 * (1.07)^{-22} - 0]}{\ddot{a}_{\overline{22}|.07}}$

01/01 normal cost $\dfrac{[95{,}000 * 9.87]}{\ddot{s}_{\overline{22}|.07}}$

= 95,000 * 9.87 / 52.436
= 17,882

Answer is C

Problem 38 **Revised 06/20/06**

This problem tests one of the basic concepts of §401(h), which is that the contribution for medical benefits or life insurance can not exceed 25% of the total contribution to the plan (other than to fund past service credits) after the date such plan is established.

No exam questions have ever been asked on the 401(h) calculations after the initial year of the 401(h) plan. There are also numerous details in IRC 420 that have never been tested.

Excluding the medical benefits, the calculation under the fresh-start alternative is

Deductible limit $= (1+i) * (NC + UAL / \ddot{a}_{\overline{10}|i})$

$= 1.07 * (650{,}000 + 1{,}500{,}000 / \ddot{a}_{\overline{10}|.07})$

$= 1.07 * (650{,}000 + 199{,}595) = 909{,}066$

Due to the size of the normal cost and accrued liability, it should be clear that the 404 Full Funding Limitation will not apply.

Let the allowable contribution for medical benefits be "M". Since the normal cost for the pension plan is 650,000, the limit under §401(h) means that

$M \div (650{,}000 + M) = 25\%$ ==> $M = (650{,}000 + M) * 25\%$

$= .25 * (650{,}000) + .25M$ = $.25 * (650{,}000) \div .75$

$= 650{,}000 \div 3$ = 216,667

Including only the medical benefits, the deductible limit is calculated as
1.07 (216,667) = 231,833

The end of year calculation with interest is not clearly detailed in the Internal Revenue Code, but seems to be a reasonable method of calculation.

Answer is B

Note that the answer in this type of problem is not always dependent only on the normal cost. The reason they said the deductible limit is calculated under Fresh Start is that the limit under 401(h) is based on the contribution to the plan. In this problem, the normal cost is less than the contribution, and the normal cost is used to calculate the 401(h) limit. If the contribution is less than the normal cost, then you would NOT use the normal cost to calculate the 401(h) limit.

For example, assume that in the problem, the Full Funding Limit applied, and the deductible limit is only 300,000. Then instead of this: 01/01 M = (650,000 + M) * 25% you would calculate the medical contribution this way 12/31 M = (300,000 + M) * 25%.

The resulting value of M represents an end of year number, since the FFL is an end of year number already.

Problem 39 Similar to 1994 #21 **Revised 12/13/04**

Under the Rolling Five Method, the calculation of withdrawal liability is relatively simple. Employer B's share of the 12/31/94 UVB is based on the ratio of employer B's contributions in the prior five years to the total contributions in the prior five years.

The complicating factor in this problem is that Employer A withdrew in 1992. As a result, the total contributions in the denominator must be reduced by the amount of contributions for Employer A.

This problem also gives you the amount of the collectible (not uncollectible!) withdrawal liability for withdrawals in prior years (presumably for Employer A). Logically, this amount should be deducted from the unfunded vested benefit liabilities. The adjusted 12/31/94 value is 800,000 - 50,000 = 750,000.

YEAR:		1994	1993	1992	1991	1990
ER share = 750,000 *	(	75,000 +	72,000 +	67,000 +	65,000 +	66,000)
	(	630,000 +	615,000 +	600,000 +	595,000 +	575,000
	-	0 -	0 -	30,000 -	63,000 -	62,000)

$$= 90{,}472 = 750{,}000 * \frac{345{,}000}{(3{,}015{,}000 - 155{,}000)}$$

After determining Employer B's share of the UVB, the de minimis amount must be calculated. Then a deductible is calculated based on the amount of the de minimis and the employer's share of the UVB. The final withdrawal liability is calculated as the employer's share less the deductible.

The mandatory de minimis is the lesser of 50,000 or 3/4% of the plan's total UVB (.0075 * 800,000 = 6,000), which is 6,000. The deductible is the de minimis amount reduced by the excess of the allocated UVB over 100,000. Since the employer's share is less than 100,000, the deductible equals the de minimis amount of 6,000. The final employer withdrawal liability is 90,472 - 6,000 = 84,472.

Answer is C

NOTES:

1. ERISA 4211(c)(3)(A) describes the Rolling Five method, and it states that you subtract the UVB for employers whose liabilities are collectible. There is no specific adjustment to the UVB for employers whose liabilities are not collectible. In ERISA 4209, there is NO similar adjustment to the UVB for calculating the de minimis amount.

2. ERISA 4211(c)(3)(B) implies that you subtract the contributions from the denominator of the fraction for any employers who had previously withdrawn. That includes both employers whose liabilities are collectible, and those whose liabilities are not collectible.

Problem 40 - Page 1

With an aggregate type cost method, you should check the Full Funding Limitation (FFL) when you are given the market value of assets and the Entry Age Normal valuation results. Since you have no information, you can ignore the FFL in this problem.

You need to determine the Limit Adjustments for the maximum deductible limit. You have to determine the remaining amortization period for the IAL base, and set up a new amortization base for the change in interest rate.

The regulation at §1.404(a)-14(h) contains rules for maintenance of 10-year amortization bases used to calculate the deductible limit. The limit adjustment on any "old" bases must be recalculated on the new 7% interest rate. The regulation specifies these steps:

1. Calculate the outstanding amount of each §404 base
2. Calculate the limit adjustment on the old interest rate for each base
3. Divide (2) into (1), which produces $\ddot{a}_{\overline{n}|\,.08}$
4. Solve for "n", which can be left exact, or rounded to integer value
5. Calculate $\ddot{a}_{\overline{n}|\,.07}$
6. Divide (5) into (1), giving the limit adjustment on the new interest rate for each base

You must calculate the number of years of amortization remaining in the original §404 base at the old 8% interest rate. Step #1 is to calculate the outstanding §404 base at 01/01/96. You can calculate the outstanding amount of the base, which equals the UAL, by using the equation of balance under §412:

UAL = O/S §404 bases
= O/S §412 bases - credit balance - ARA
= $82{,}407 * \ddot{a}_{\overline{24}|\,.08}$ - 0 - 0
= 937,055

Step #2 is the limit adjustment on the old interest rate for the base:

IAL = $82{,}407 * \ddot{a}_{\overline{30}|\,.08}$ = 1,001,938

LA = $1{,}001{,}938 / \ddot{a}_{\overline{10}|\,.08}$ = 138,258

Step #3 is calculation of $\ddot{a}_{\overline{n}|\,.08}$, which is 937,055 / 138,258 = 6.7776.

Step #4 is determination of "n", which is 9.0597 at 8% interest. You can either keep all the decimals, or round "n" to 9 years. For simplicity, I'll use 9 years.

Problem 40 - Page 2 **Revised 09/23/98**

Step #5 is calculation of $\ddot{a}_{\overline{9}|.07}$, which is 6.9713.

The change in interest rate produces a new §404 base of 200,000 at 01/01/96. The following table summarizes the calculation of the new 7% limit adjustments for the outstanding 404 bases:

	IAL Base	Assumption Change base	Total
01/01/96 O/S §404 base	937,055	200,000	1,137,055
Years for annuity	9	10	
7% annuity value	6.9713	7.5152	
7% limit adjustment	134,416	26,613	161,029

Normal cost plus Limit adjustments at 7% interest:
1.07 (100,000 + 161,029) = 279,301

Since there are no loss bases, funding deficiencies, waivers, or OBRA FFC bases, the minimum funding requirement would not produce a greater deductible limit. The final steps are calculation of the §412 amortizations, and the MFSA for 1996.

	IAL Base	Assumption Change base
01/01/96 O/S §412 base	937,055	200,000
Years for annuity	24	10
7% annuity value	12.2722	7.5152
Amortization charge	76,356	26,613

1996 Minimum Funding Standard Account

Charges		Credits	
Normal Cost	100,000	Credit Balance	0
IAL amortization	76,356	12/31 contrib	279,301
Assump. amortization	26,613		
7% interest	14,208	7% interest	0
Total charges	217,177	Total credits	279,301

The credit balance equals 279,301 - 217,177 = 62,124 .

Answer is D

Problem 41 - Page 1 **Revised 11/23/98**

With the Aggregate cost method, market value of assets, and EAN valuation results, you should check that the Full Funding Limitation (FFL) may apply. This is the first problem where the RPA '94 FFL applied.

The deductible limit is the normal cost plus limit adjustments brought forward with interest to the earlier of the end of the plan year, or the end of the tax year. With a 12/31 valuation date, there is no interest applied. Under the Aggregate method, the limit adjustments equal zero.

The first step is to set up the §404 PVNC, and calculate the §404 normal cost:

§404 PVNC	=	PVB - AAV		
	=	2,000,000	- 600,000	= 1,400,000
PVE / E	=	20,000,000	/ 1,500,000	= 13.3333
§404 NC	=	105,000		

Deductible limit = 105,000

The second step is to check the Full Funding Limitation under 404 :

§404 "ERISA" FFL = EAN AL + NC - (lesser MVA,AAV)
= 700,000 - 595,000
= 105,000

§404 "OBRA" FFL = 1.50 (12/31 CL) - (lesser MVA,AAV)
= 1.50 * 725,000 - 595,000
= 492,500

§404 "RPA 94" FFL = 0.90 (12/31 CL) - (AAV)
= 0.90 * 790,000 - 600,000
= 111,000

The §404 FFL of 111,000 does not apply. Now you must check the §412 minimum contribution to see if it is greater. One reason this may happen is the OBRA FFL base at 12/31/96.

§412 PVNC = PVB - AAV - (O/S §412 bases - CB)
= 2,000,000 - 600,000 - (150,000 - 0)
= 1,250,000
PVE / E = 20,000,000 / 1,500,000 = 13.3333
§412 NC = 93,750

Problem 41 - Page 2 **Revised 12/17/02**

One subtle point is that the 12/31/95 Full Funding credit was equal to 140,187. The base established at 12/31/96 equals 1.07(140,187) = 150,000. If you had a 01/01 valuation date, the 01/01 FFC base would equal the amount of the 12/31 FFL credit.

FFC amortization = 150,000 / $\ddot{a}_{\overline{10}|.07}$ = 19,959

1996 Minimum Funding Standard Account

Charges		Credits	
12/31 Normal Cost	93,750	Credit Balance	0
12/31 OBRA base	19,959	12/31 contrib	x
7% interest	0	7% interest	0
Total charges	113,709	Total credits	x

If you stop here and assume the deductible limit is the minimum contribution of 113,709, you'll get the wrong answer (but not if you apply the §404 FFL of 111,000). The main point of this problem is that you must check to see if the §412 FFL applies. With a zero credit balance, the §412 FFL is the same as the §404 FFL of 111,000.

Based on the 12/82 proposed regulation, the Accumulated Funding Deficiency based on no contribution and no credit balance must be calculated. This equals the charges of 113,709. The §412 FFL credit is defined as the excess of the accumulated funding deficiency based on zero contribution and zero credit balance over the FFL.

Full Funding Credit = 113,709 - 111,000
= 2,709

1996 Minimum Funding Standard Account

Charges		Credits	
		Credit Balance	0
12/31 Normal Cost	93,750	12/31 FFL credit	2,709
12/31 OBRA base	19,959	12/31 contrib	x
7% interest	0	7% interest	0
Total charges	113,709	Total credits	x + 2,709

The minimum contribution at 12/31/96 is 111,000. The deductible limit is the lesser of the 404 FFL of 111,000, or the greater of the normal cost plus limit adjustments of 105,000 and the minimum contribution of 111,000. The final result is 111,000.

Answer is C

If you had more than 100 participants, then the final deductible limit would be the Unfunded Current Liability.

Problem 42 **Revised 11/23/98**

This is an unusual PBGC guaranteed benefits question. It tests your knowledge of the five year phase-in for non-owners, as well as the handling of phase-ins for retired employees. Guaranteed benefits are based on the vested accrued benefits of the plan participants. In calculating the guaranteed benefit, remember that changes in vesting schedule, normal retirement age, and normal form of annuity payment are all considered as changes in benefit amount that are subject to the phase in rules.

If there was a change in normal form of benefits, you would have to normalize the benefits. Normalization is the process of converting benefits available under earlier sets of plan provisions to equivalent benefit amounts based on the plan provisions in effect at date of plan termination (DOPT). This is a necessary step, otherwise you would be comparing apples and oranges.

The change in plan benefits at 01/01/94 is subject to phase-ins at the DOPT of 01/01/96. The new benefits have been in effect for two full years at DOPT. Smith is age 63 at DOPT. The PBGC maximum monthly guaranteed benefit (MGB) adjusted for benefit commencement at age 63 is (1-2*.07)*2,642.05 = 2,272.16. Since the spouse died in 1993, Smith's benefit is payable as a life annuity at DOPT, and the MGB does not need to be adjusted for a different form of benefit payment .

	Smith: 5 year phase-ins
Date of birth	01/01/33
01/01/96 age	63
01/01/80 plan benefit, original retirement benefit	2,100.00
Years plan has been in effect	16
Five year phase-in	2,100.00
01/01/94 plan benefit	2,415.00 = 2,100(1.15)
01/01/94 plan benefit, limited to MGB	2,272.16
Guaranteeable benefit increase	172.16 = 2,272.16 - 2,100.00
Years plan has been in effect	2
Two year phase-in	68.86 = Greater of 40% or $40/mo.
Total guaranteed monthly benefit	2,168.86 = 2,100.00 + 68.86

Answer is D

Problem 43 - Page 1

The point of this problem is that you can't simply ignore the MFSA for 1995, even though you are given the credit balance at 12/31/95. Your main clue would be that this problem is too simple if you only have to set up the MFSA at 01/01/96. The second clue is that you are given information on the Full Funding Limitation at both 01/01/95 and 01/01/95. You need to set up the MFSA at 01/01/95 to determine the effect of the FFL:

1995 Minimum Funding Standard Account

Charges		**Credits**	
		Credit Balance	0
Normal Cost	300,000	12/31 contribution	x
7% interest	21,000	7% interest	0
Total charges	321,000	Total credits	x

This problem gives you no information regarding the 1995 contribution. Based on the 12/31/95 credit balance of zero, you know that the minimum contribution was paid. You should check the Full Funding Limitation:

§412 "ERISA" FFL = EAN AL + NC - (lesser MVA,AAV - CB)
256,800 = 1.07*(260,000 + 1,200,000 - (1,220,000 - 0))

§412 "OBRA" FFL = 1.50 (12/31 CL) - (lesser MVA,AAV - CB)
82,100 = 1.50 * 925,000 - 1.07*(1,220,000 - 0)

§412 "RPA 94" FFL = 0.90 (12/31 CL) - (AAV)
0 = 0.90 * 925,000 - 1.07*(1,220,000)

Based on the 12/82 proposed regulation, the Accumulated Funding Deficiency (AFD) based on no contribution and no credit balance must be calculated. This equals the MFSA charges of 321,000. The §412 FFL credit is defined as the excess of the AFD based on zero contribution and zero credit balance over the FFL:

"ERISA" Full Funding Credit = 321,000 - 256,800
= 64,200
"OBRA" Full Funding Credit = 321,000 - 82,100
= 238,900

The last step is that the OBRA Full Funding credit amortization base for the following year is defined as the excess (if any) of the FFC due to the OBRA FFL over the FFC due to the ERISA FFL.

OBRA FFC base = 238,900 - 64,200 = 174,700

Problem 43 - Page 2

This base will be amortized over 10 years starting in 1996: $23{,}246 = 174{,}700 \div \ddot{a}_{\overline{10}|.07}$

It is not necessary to finalize the 1995 MFSA. The reason is that you know the minimum contribution was paid for 1995 because the credit balance is zero at 12/31/95. Now you should set up the 1996 MFSA.

In general, the calculation of the normal cost must satisfy the formulas that are applicable to all reasonable funding methods (see the regulations at §1.412(c)(3)-1):

Except under the Aggregate method

PV Future Normal costs = PV Future Benefits - Actuarial Assets
- (O/S §412 amortization bases - credit balance - ARA)

PVNC = PVFB - AAV - O/S bases + CB
= 6,000,000 - 1,500,000 - 174,700 + 0
= 4,325,300
PVE/E = 40,000,000 / 3,000,000 = 13.3333
NC = 4,325,300 / 13.3333
= 324,398

1996 Minimum Funding Standard Account

Charges		Credits	
Normal Cost	324,398	Credit Balance	0
FFC amortization	23,246	12/31 contrib	x
7% interest	24,335	7% interest	0
Total charges	371,979	Total credits	x

You should check the Full Funding Limitation for 1996:

§412 "ERISA" FFL = EAN AL + NC - (lesser MVA,AAV - CB)
395,900 = 1.07*(270,000 + 1,600,000 - (1,500,000 - 0))

§412 "OBRA" FFL = 1.50 (12/31 CL) - (lesser MVA,AAV - CB)
495,000 = 1.50 * 1,400,000 - 1.07*(1,500,000 - 0)

§412 "RPA 94" FFL = 0.90 (12/31 CL) - (AAV)
0 = 0.90 * 1,400,000 - 1.07*(1,500,000)

The FFL does not apply, so the minimum contribution at 12/31/96 is 371,979.

Answer is C

Problem 44 **Revised 07/30/00**

In the absence of the combined DB/DC plan limit, the excise tax would be based on the separate deductible limits for the DB and the DC plans. The deductible limit for the DC plan equals the actual contribution, since it is a money purchase pension plan. Since the DB contribution is less than the DB plan deductible limit of 700,000, there would be no excise tax if the combined limit did not exist.

§404(a)(7)(A) of the IRC defines the overall deduction limitation for combinations of DB and DC plans. The limit is the greater of 25% of compensation, or the amount paid to the DB plans, not to exceed the minimum contribution requirement for the DB plan under §412. If the deductible limit for a year was based on the unfunded current liability, the deduction limitation would be no less than that amount.

You are given the pay for all employees in both Division X and Division Y. It does not make sense that you would use the total compensation for both divisions, since the plans only cover employees in Division X.

The overall deduction limitation is the greater of 25%(2,500,000) = 625,000, and the minimum contribution requirement for the DB plan. The result is 630,000, which is the DB plan minimum contribution.

The total contributions paid to both plans equal 650,000 + 250,000 = 900,000. The non-deductible contribution is 900,000 minus the overall deduction limitation of 630,000, or 270,000.

The excise tax is NOT based solely on the non-deductible contribution. Under RPA ’94, there is an exemption from the excise tax for the lesser of the DC plan contribution, or the first 6% of taxable compensation. This excise tax exemption is only available if there are more than 100 employees covered by the DB plans whose contributions are limited.

This equals the lesser of 250,000, or 6%(2,500,000) = 150,000. The excise tax is 10% of the non-deductible contribution of 270,000 minus the 150,000 which is exempt from the excise tax. The final excise tax is 10%(120,000) = 12,000.

Answer is B