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2012 EA-2B EXAM SOLUTIONS

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2012 EA-2B Exam Solutions

These solutions were prepared based on the law as in effect at November 30, 2011.

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!

Revision History:

January 24, 2019	Corrected note for problem 22
April 23, 2018	Corrected solution for problem 39
February 16, 2016	Corrected solutions for problems 20, 26 and 38
March 26, 2014	Corrected solution for problem 20
March 14, 2014	Corrected solution for problems 23, 27 and 28
February 28, 2014	Corrected solution for problems 4 and 30
April 26, 2013	Corrected solution for problem 31
February 14, 2013	Original solutions

NOTES on 2012 exam

Both the 2011 and 2012 exams were more difficult than earlier years' exams. I think the 2011 exam was much trickier than earlier years' exams.

Exam <u>Year</u>	Pass <u>Mark</u>	Percentage <u>Who passed</u>	
2012	65	40.0	
2011	63	39.2	
2010	69	43.7	
2009	68	59.1	(not a typo!)
2008	63	37.2	

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Problem 1

FALSE

For financial reporting, the actuarial information includes a copy of the actuarial valuation report. The Funding target under IRC 430 must be shown separately for actives, terminated vested, and those in pay status. There is no exception for “ancillary benefits that are not protected by anti-cutback provisions”.

Answer is B

Problem 2

TRUE

For this participant, the IRC 415 limit is the lesser of the dollar limit (unknown) and 100% of the highest three year average compensation. It appears the resulting 415 limit is equal to the average compensation of 50,000.

The IRC 415 limits are defined based on a straight life annuity. In general, the limits are reduced for other forms of benefit payment. But there is a specific exception in IRC 415(b)(2)(B) for the Qualified J&S form of benefit payment. This allows a plan to provide the full 415 limit with no reduction.

Answer is A

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Problem 3

TRUE

This is a requirement of the DOL regulations on the summary of material modifications at 2520.104b-3:

“Except as provided in paragraph (d) of this section, the plan administrator shall furnish this summary not later than 210 days after the close of the plan year in which the modification or change was adopted”

The exception in paragraph (d) only applies to group health plans. Based on the default exam conditions, the term “plan” refers to a defined benefit pension plan.

Answer is A

Problem 4

Revised 02/28/14

TRUE

In general, a loan from a plan is a prohibited transaction. There is an exemption for typical loans to participants of qualified plans in IRC 4975(d)(1).

This loan to the plan sponsor does not satisfy that exemption.

Answer is A

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Problem 5

Similar to 2008 #14

TRUE

§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 either

- The employer establishes (or maintains) a “qualified replacement plan”, or
- The employer grants certain benefit increases prior to plan termination.

The general definition of a qualified replacement plan includes 95% participation by continuing employees from the terminating plan, plus an asset transfer of at least 25% of the excess assets. You can reduce the 25% asset transfer by the value of benefit improvements made in the 60 days ending on the date of plan termination.

Only 91.3% of the 230 participants are covered by the replacement plan. That is not sufficient to reduce the excise tax to 20%.

Answer is A

Problem 6

TRUE

Under the PBGC regulations at 4010.4(a), reporting is required for all members of the controlled group if any plan has a Funding Target Attainment Percentage (FTAP) less than 80%. There are exemptions under 4010.4(c), but none of these apply.

Reporting under 4010.11 is waived if the aggregate 4010 funding shortfall (for all plans maintained by controlled group members) does not exceed \$15 million. This calculation includes any exempt plans in the controlled group, but it ignores plans with no 4010 funding shortfall.

The unfunded vested benefits given are similar to the funding shortfall. It should be clear that the aggregate 4010 funding shortfall exceeds \$15 million.

Answer is A

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Problem 7

TRUE

This idea has been tested on some earlier IRC 416 problems that involved calculation of the Top Heavy (T-H) ratio. In general, any in-service distributions for the five years ending on the determination date must be included in the T-H ratio. But this participant would be excluded from the T-H ratio, since they are not active within the 12 months ending on the determination date.

Answer is A

Problem 8

TRUE

In general, amendments can not take effect if the Adjusted Funding Target Attainment Percentage (AFTAP) is less than 80%. IRC 436(c)(2) allows the amendment to take effect if the plan sponsor makes an additional IRC 436 contribution.

The amount of the 436 contribution varies depending on the value of the AFTAP prior to reflecting the amendment. If the AFTAP is less than 80%, the contribution must be equal to the increase in the Funding target due to the plan amendment.

The point of this question is that the plan amendment only increases the future benefit accruals. It does not change the value of the Funding target, since that is defined based on the accrued benefit at the valuation date.

Answer is A

NOTE

This situation is specifically referenced in the regulation at 1.436-1(c)(2)(ii).

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Problem 9

Similar to 2008 #3

TRUE

The Qualified Optional Survivor Annuity (QOSA) was added by PPA 2006 to IRC 417(g). If the QJSA percentage is less than 75%, the plan needs to add a 75% QOSA starting in 2008. If the QJSA percentage is 75% or more, the plan needs to add a 50% QOSA starting in 2008.

Answer is A

Problem 10

FALSE

This is one of the rare questions that require some knowledge of EA-2A topics.

This question touches on Revenue Procedure 90-49 which has never been tested before <surprise>. This allows return of non-deductible contributions due to a “mistake of fact”. The contributions must be less than 25,000.

Answer is B

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Problem 11

TRUE

Despite the requirement to use prescribed assumptions, there are various choices of assumptions available to an enrolled actuary. The assumptions used for any actuarial work must be disclosed and documented.

Answer is A

Problem 12

FALSE

At first glance, it appears this participant has 7 years of service. This is based on the years 2002 through 2005 plus the years 2009 through 2011.

The key point of the problem is that the plan counts vesting service in the “most restrictive” manner. That means you should ignore the hours earned in 2002. The participant does not attain age 18 until 01/01/2003. See IRC 411(a)(4)(A).

Smith has six years of vesting service, so they are not yet 100% vested.

Answer is B

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Problem 13

Similar to 2009 #36

TRUE

This question requires knowledge of section 4006.7 of the PBGC regulations, which defines the premium rate for a "DRA 2005 termination", which is subject to the plan termination premium.

Unlike the variable rate premium, you do not use the value of the participant count at the end of the prior plan year. Instead, you should use the count on the day before the plan termination date.

Answer is A

NOTE

In 4007.1(a)(2), it states that certain plan terminations are not subject to the plan termination premium. These terminations are due to bankruptcy proceedings that were filed prior to October 18, 2005.

Problem 14

Similar to 2010 #1

TRUE

This is similar to earlier exam questions on the regulations governing standards of performance of Enrolled Actuaries. At 901.20(c), the regulation states

"(c) Advice or explanations.

An enrolled actuary shall provide to the plan administrator upon appropriate request, supplemental advice or explanation relative to any report signed or certified by such enrolled actuary."

Answer is A

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Problem 15

Similar to 2009 #15

FALSE

The administrator of a defined benefit plan is required to either

- furnish a benefit statement at least once every three years to each vested participant, or
- furnish at least annually to each vested participant notice of the availability of a benefit statement

Answer is B

NOTE

The administrator of a defined contribution plan is required to furnish a benefit statement to participants or beneficiaries on either a quarterly or annual basis.

Problem 16

FALSE

This question tests a specific exception in determination of the premium funding target. The qualified pre-retirement survivor annuity must be included in the calculation. The trick is that the lump sum death benefit should not be included, due to a specific exception.

See PBGC regulation 4006.4

Answer is B

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Problem 17

TRUE

In general, all members of a controlled group are liable for the benefit liabilities of plans sponsored by other controlled group members.

Answer is A

Problem 18

TRUE

This is a requirement of the DOL regulations on the summary plan description at 2520.104b-2.

Answer is A

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Problem 19

Similar to 2004 #24

I. TRUE

In the regulation at 901.20(h), it requires the actuary to report any non-filing of actuarial documents they have signed. Since the actuary did sign the PBGC-1 forms, they must notify the PBGC of the non-filing.

II. FALSE

Since the PBGC-1 form is not filed with the Joint Board for Enrollment of Actuaries (JBEA), the actuary does not need to notify the JBEA.

III. TRUE

In the regulation at 901.20(h), it requires the actuary to report any non-filing of actuarial documents they have signed. This notification must be done in writing.

Answer is B

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Problem 20 – Page 1

Similar to 2010 EA-2A #10

Revised 02/16/16

This is not a typical §415 problem. It is unusual to have late retirement problems with §415 limits. One key point of the problem is the calculation of the actuarial increase in the §415 dollar limit after age 65. Another key point is that the §415 limits are reduced for service (and participation) less than 10 years.

Earnings for the §415 limit is defined as total compensation (not taxable). Based on the regulation that became final in 2007, earnings under §415 are subject to the §401(a)(17) limit.

At 12/31/12

Age	70
Service	13 years
Participation	7 years

One simplifying factor in this problem is that you do not calculate the plan benefit. The problem only asks for the 415 limit.

415 COMP LIMIT

The §415(b)(1)(B) compensation limit is reduced when service is less than ten years. This limit is based on the highest three consecutive years of pay:

Year	2010	2011	2012
Pay	225,000	225,000	225,000
401(a)(17) limit	245,000	245,000	250,000
Limited pay	225,000	225,000	225,000

$$3 \text{ year final average pay} = 225,000$$

$$\begin{aligned} \text{\$415 compensation limit} &= 225,000 * (10/10) \\ &= 225,000 \end{aligned}$$

415 DOLLAR LIMIT

Under §415(b)(1)(A), the dollar limit is reduced when participation is less than ten years. In §415(b)(5)(C), it states that the pro-rata reduction would never be less than 1/10:

$$\begin{aligned} \text{\$415 dollar limit during 2012} &= 200,000 * (7/10) && \text{for ages 62-65} \\ &= 140,000 \end{aligned}$$

§415(b)(2)(E)(i) says to use the lesser of 5% and the interest rate specified in the plan to increase the §415 dollar limit after age 65, but here the code is misleading. The examples in the 1.415 regulation clarify the increases in the §415 dollar limit.

Mandated basis - Actuarial increase factor

Here is the short version of what you need to know. If you want to see the long version, check out the notes at the end of this solution.

Actuarial increase factor for 415 dollar limit, based on mandated 5%, applicable mortality:

Death benefit definition	Factor
Waived QPSA, or NO death benefit (complete forfeiture on death)	$N_{65}^{(12)} / N_X^{(12)}$
QPSA death benefit, and plan charges participants for cost of QPSA (default per 2010 exam condition 9)	$N_{65}^{(12)} / N_X^{(12)}$
100% of PV of accrued benefit (no forfeiture on death)	$v^{65-X} (\ddot{a}_{65}^{(12)} / \ddot{a}_X^{(12)})$
QPSA death benefit, and plan does NOT charge for cost of QPSA (treat as no forfeiture on death)	$v^{65-X} (\ddot{a}_{65}^{(12)} / \ddot{a}_X^{(12)})$

You are told that the plan's death benefit is 100% of the present value of the accrued benefit. That means there will be no forfeiture on death.

You should use the $\ddot{a}_{65}^{(12)}$ and $\ddot{a}_{70}^{(12)}$ factors to increase the dollar limit after age 65 on the mandated basis. In this problem, you are given values of these annuities at both 5% and 7.5% interest.

Mandated basis increase factor

$$\begin{aligned}
 \text{Actuarial increase from 65 to 70} &= (1.05)^5 [\ddot{a}_{65}^{(12)} / \ddot{a}_{70}^{(12)}] \\
 &= (1.05)^5 (470,592 / 38,961) / (301,642 / 28,773) \\
 &= 1.2763 (12.0785 / 10.4835) \\
 &= 1.4705
 \end{aligned}$$

Plan basis increase factor

The problem states that the late retirement benefit is the greater of continued benefit accruals, or the actuarial increase in the normal retirement benefit (age 62). There is no way to calculate the effect of continued benefit accruals - but that is immaterial.

The plan basis factor for increasing the 415 dollar limit is defined in the 1.415 regulation, and it is rather complex. It basically ignores future benefit accruals beyond age 65, but includes any actuarial increase after age 65. For more details, see the notes at the end of this solution.

Problem 20 – Page 3**Revised 03/26/14**

For the 415 dollar limit, the plan basis actuarial increase factor is equal to A / B:

- A. Actuarially increased benefit at late retirement age
- B. Accrued benefit at age 65

The actuarial increase factor is similar to the mandated basis factor, but it uses the plan's interest rate of 4.0% for actuarial equivalence:

$$\begin{aligned}\text{Actuarial increase from 65 to 70} &= (1.04)^5 [\ddot{a}_{65}^{(12)} / \ddot{a}_{70}^{(12)}] \\ &= (1.04)^5 * (1,232,637 / 72,900) / (904,410 / 58,535) \\ &= 1.2167(16.9086/15.4508) \\ &= 1.3314\end{aligned}$$

Final benefit determination

$$\begin{aligned}\$415 \text{ dollar limit at age 70} &= 140,000 * \text{lesser of } [1.4705 \text{ or } 1.3314] \\ &= 186,403\end{aligned}$$

$$\begin{aligned}\text{Life annuity } \$415 \text{ limit at 70} &= \text{lesser of 3 year comp limit and dollar limit} \\ &= \text{lesser of 225,000 and 186,403} \\ &= 186,403\end{aligned}$$

Answer is B**NOTES****Definition of plan's actuarial increase factor**

The key point of this problem is interpretation of the plan's actuarial increase for late retirement benefits. Some students calculated this using the ratio of the N_x factors, which produces a different answer range. If there was no death benefit, then the actuarial increase factor would use the ratio of the $N_x^{(12)}$ factors.

As described in the solution above, the actuarial increase must reflect the death benefit under the plan. It would be inconsistent for the definition of the actuarial increase factors to be different for the mandated basis factor versus the plan basis factor.

Lengthy discussion of actuarial increases in 1.415 regulation**Actuarial increase of 415 dollar limit above age 65 (LONG version)**

If the plan document does not define a life annuity at both age 65 and the late retirement age, then the \$415 dollar limit is increased using a single factor calculated based on the mandated mortality and interest rate. If the plan does define a life annuity benefit at both ages, then the \$415 dollar limit is increased using the lower of two factors:

1. Actuarial increase factor based on the mandated mortality and interest rate, and
2. Adjustment ratio for plan benefits after age 65 (as defined in the regulation)

Actuarial increase of 415 dollar limit above age 65 (continued)

The definition of the actuarial equivalent increase factor (on the mandated mortality and interest rate) will vary depending on the definition of the death benefit. If there is no forfeiture on death, then you can ignore pre-retirement mortality:

$$v^{65-x} (\ddot{a}_{65}^{(12)} / \ddot{a}_x^{(12)})$$

If the death benefit is defined as 100% of the present value of the accrued benefit, then there is no forfeiture upon death. In 1.415(b)-1(e)(3), it states that you may treat a typical Qualified Pre-retirement Survivor Annuity (QPSA) death benefit as resulting in no forfeiture on death. This treatment is only allowed if the plan does not charge for the cost of the QPSA, and if the plan applies the same treatment for all retirement ages (both before age 65 and after age 65).

If there is a forfeiture on death, then you must reflect pre-retirement mortality:

$$(N_{65}^{(12)} / N_x^{(12)}) = (v^{65-x} / {}_{x-65}p_{65}) (\ddot{a}_{65}^{(12)} / \ddot{a}_x^{(12)})$$

If there is no death benefit, then there is a full forfeiture upon death. This can happen if the participant is single, or if they are married, and they elect out of the Qualified Pre-retirement Survivor Annuity (QPSA). With a typical QPSA death benefit, there will be a forfeiture on death. Based on 2012 exam condition 10, in the absence of any other information, you should assume that the plan does charge the participants for the cost of the QPSA.

Actuarial increase factor for 415 dollar limit, based on mandated 5%, applicable mortality:

Death benefit definition	Factor
Waived QPSA, or NO death benefit (complete forfeiture on death)	$N_{65}^{(12)} / N_x^{(12)}$
QPSA death benefit, and plan charges participants for cost of QPSA (default per exam condition 12)	$N_{65}^{(12)} / N_x^{(12)}$
100% of PV of accrued benefit (no forfeiture on death)	$v^{65-x} (\ddot{a}_{65}^{(12)} / \ddot{a}_x^{(12)})$
QPSA death benefit, and plan does NOT charge for cost of QPSA (treat as no forfeiture on death)	$v^{65-x} (\ddot{a}_{65}^{(12)} / \ddot{a}_x^{(12)})$

If the plan did define a life annuity benefit at both ages, then the §415 dollar limit would be increased using the lower of two factors: The plan basis factor is equal to the “Adjustment ratio” for plan benefits after age 65 (as defined in the regulation).

The “Adjustment ratio” is equal to A / B:

- A. Adjusted immediately commencing straight life annuity
- (1) Ignoring Section 415 limits and accruals after age 65
 - (2) Including actuarial increases after 65

Actuarial increase of 415 dollar limit above age 65 (continued)

B. Adjusted age 65 straight life annuity

- (1) For hypothetical participant at age 65 with same accrued benefit as the actual participant
- (2) Ignoring Section 415 limits, accruals after age 65, AND actuarial increases after 65

In the absence of any additional information, you should assume that the plan benefits are actuarially increased beyond normal retirement age. The only time you should not make this assumption is when the problem clearly indicates that the plan does not grant actuarial increases in benefits.

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Problem 21

Similar to 2011 #25

This is a very simple problem on calculating the variable rate premium (VRP). The key point is knowing the definition of the variable rate premium cap.

The unfunded vested benefits liability (UVB) is calculated as the excess of the premium funding target over the market value of assets. The market value includes the present value of any prior year contributions that are received by the date the premium filing. The contributions are discounted using the prior year's effective interest rate.

Ignoring the cap, you calculate the variable rate premium as .009 times the UVB. The UVB must be rounded up to the next higher multiple of 1,000:

$$\begin{aligned}\text{UVB} &= 1,370,100 - 682,400 \\ &= 687,700\end{aligned}$$

$$\begin{aligned}\text{VRP} &= 688,000 * .009 \\ &= 6,192\end{aligned}$$

The plan is eligible for the cap if there are 25 or less employees on the first day of the plan year. On 12/31/2011, you are told there are 26 active participants, plus 24 non-active participants. Since the total employee count is more than 25, the plan is not eligible for the VRP cap.

The problem asks for the total PBGC premium, which is the sum of the flat rate premium (FRP) and the VRP. The JBEA tables given with the exam stated that the 2012 flat rate premium is \$35 per participant:

$$\begin{aligned}\text{FRP} &= \$35(50) \\ &= 1,750\end{aligned}$$

$$\begin{aligned}\text{FRP+VRP} &= 1,750 + 6,192 \\ &= 7,942\end{aligned}$$

Answer is D

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Problem 22

Similar to 1999 #25

Revised 01/24/19

Under the Rolling Five Method, the calculation of withdrawal liability is relatively simple. Since the withdrawal occurred during 2011, you should use the UVB at 12/31/2010. This problem gives you the amount of the collectible withdrawal liability for withdrawals in prior years. The collectible withdrawal liability should be deducted from the unfunded vested benefit liabilities. The adjusted 12/31/2010 UVB is $75,200,000 - 2,500,000 = 72,700,000$.

The next step is calculation of Employer A's share of the 12/31/10 UVB. This is based on the ratio of Employer A's contributions to the total contributions in the prior five years:

YEAR:	2006	2007	2008	2009	2010
ER share = 72,700,000 * (650 +	870 +	905 +	805 +	725)
	(23,400 +	25,300 +	28,900 +	29,100 +	25,200
	- 450	- 350	- 625	- 800	- 1,225)

It is easier to avoid arithmetic errors if you get rid of the extra zeroes in the contribution values.

$$\begin{aligned}\text{ER share} &= 72,700,000 * 3,955 / (131,900 - 3,450) \\ &= 2,238,447\end{aligned}$$

You do not need to calculate the de minimis amount. Since the employer share exceeds 150,000, the deductible is zero. The employer withdrawal liability is 2,238,447.

Answer is D

NOTES

1. The mandatory de minimis is the lesser of 50,000 or 3/4% of the plan's total UVB. The deductible is the de minimis amount reduced by the excess of the allocated UVB over 100,000. Once the employer share reaches 150,000, the deductible becomes zero.
2. 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.
3. ERISA 4211(c)(3)(B) implies that you subtract the contributions from the denominator of the fraction for any employers who had previously withdrawn within the five year period. That includes both employers whose liabilities are collectible, and those whose liabilities are not collectible.

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Problem 23

Revised 03/14/14

This questions tests a tiny detail for the first time - the effect on benefit accrual service of repayment of a prior lump sum. Smith and Jones are essentially clones - the only difference is that Smith repaid the prior lump sum at 07/01/2011, but Jones did not.

	Smith	Jones
Date of birth	01/01/1949	Identical
01/01/2003 age	54	"
Date of hire	01/01/2000	"
1 st date of termination	12/31/2002	"
Vesting service at 12/31/2002	3	"
Vesting percentage	20%	"
Benefit accrual service at 12/31/2002	3	"
Average pay	50,000	"
Accrued benefit at 12/31/2002	3%(3.0)(50,000) = 4,500	"
Received lump sum	07/01/2003	"

	Smith	Jones
Rehire date	01/01/2008	Identical
2 nd date of termination	12/31/2012	"
Vesting service at 12/31/2012	8	"
Vesting percentage	100%	"
Repaid lump sum at 07/01/2011?	YES	NO
Benefit accrual service at 12/31/2012	8 = 5 + 3	5
Average pay	50,000	50,000
Accrued benefit at 12/31/2012	3%(8.0)(50,000) = 12,000	3%(5.0)(50,000) = 7,500

Since Smith repaid the lump sum, their final benefit calculation is based on their benefit accrual service including the years prior to their rehire date. Jones did not repay the lump sum, so their final benefit calculation is based on their benefit accrual service after their rehire date.

The difference in the monthly benefits for Smith and Jones is $(12,000 - 7,500) / 12 = 375$ per month.

Answer is B

NOTE

The benefit calculation is based on the rules in IRC 411(a)(7)(B) and (C). IRC 411(a)(7)(B) allows a plan to disregard service for which the participant has received a distribution of the present value of their vested benefit. IRC 411(a)(7)(C) requires a plan to include such service if the participant repays the amount (with interest at the 411(c)(2)(c) rate - the semi-annual federal mid term interest rate used for mandatory employee contributions).

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Problem 24

Similar to 2008 #23

This is a simplified question on the details of IRC section 401(a)(26). This section contains additional participation requirements beyond those in 410(b). In general, a trust is not qualified unless the plan, on each day of the plan year, benefits the lesser of 50 employees, or 40% or more of the employees of the employer. SBJPA added a floor to the 40%, which is 2 employees - unless there is only one employee, in which case the one employee must be covered.

The key point of this problem is that the plan covers both employees who are covered under a collective bargaining agreement (CBA), and those who are not. As under 410(b), you typically disaggregate such a plan into two parts. The portion that covers the CBA employees can be tested separately from the portion that covers the non-CBA employees.

1.410(b)-6(d) requires you to disaggregate the CBA employees for testing under 410(b). But 1.401(a)(26)-2(d)(2)(i) has a permissive disaggregation rule for the handling of this plan. You can choose whether or not to disaggregate the CBA employees.

The question asks how many of the employees in location D need to benefit under the plan to satisfy 401(a)(26). The plan only covers employees in locations B and D. You should work the problem two ways - first assume that you do not disaggregate the 15 CBA employees in location C. Then redo the calculations assuming that you do disaggregate the CBA employees.

FIRST Solution - do not disaggregate CBA employees

Total employees = $41 + 19 + 15 + X = 75 + X$ (including the 15 CBA employees)

The plan covers $19 + X$ employees in locations B and D

$$\begin{aligned} (19 + X) / (75 + X) &\geq 40\% && \text{and } 19 + X \leq 50 \\ (19 + X) &\geq (.40)(75 + X) \\ 19 + X &\geq 30 + .4X \\ X &\geq 18.3 \text{ (round up to 19 employees)} \end{aligned}$$

Second Solution - Disaggregate CBA employees

Total employees = $41 + 19 + X = 60 + X$ (ignoring the 15 CBA employees)

The plan covers $19 + X$ employees in locations B and D

$$\begin{aligned} (19 + X) / (60 + X) &\geq 40\% && \text{and } 19 + X \leq 50 \\ (19 + X) &\geq (.40)(60 + X) \\ 19 + X &\geq 24 + .4X \\ X &\geq 8.3 \text{ (round up to 9 employees)} \end{aligned}$$

Answer is B

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Problem 25 – Page 1

This is not a typical PBGC guaranteed benefits question. This question tests your knowledge of the five year phase-in calculations. The key point of the question is how to do the asset allocation.

The first step in the solution is to determine the benefits in each PBGC Priority Category. If any participants are currently eligible to retire, they might be in Priority Category 3 (PC3). Since the participants are both under age 55, there are no benefits in PC3.

The next step is determination of the guaranteed benefit under the 5 year phase-in rules. This is the same as the definition of the benefit in Priority Category 4 (PC4).

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.

The PBGC maximum monthly guaranteed benefit (MGB) is defined as the lesser of the adjusted ERISA §4022(b) value, or the highest five year consecutive compensation. The MGB is defined assuming payment on a life annuity basis at age 65.

You should use the 2012 MGB value, since the termination date is 01/01/2012. The 2012 MGB at 65 is 4,653.41 (from the tables given with the exam). You must reduce the MGB for benefit commencement ages before 65. The MGB should be adjusted based on the later of the age at DOPT, or the age at benefit commencement. Based on the PBGC study note, it is correct to age adjust the MGB, even when it is based on the highest five year compensation.

The problem implies that the 2009 plan amendment was effective on 03/01/2009. For purposes of measuring the years that each plan was effective, you use the later of the effective date and the adoption date. The 03/01/2009 plan has been in effect for two full years at DOPT, from 03/01/2009 to 01/01/2012.

The problem states that terminated vested participants can receive benefits at age 55, if they have at least 10 years of service. The problem gives the PBGC expected retirement age (XRA) as 58, and gives a present value factor based on benefit commencement at age 58.

	Smith	Jones
Date of birth	01/01/60	01/01/60
01/01/12 age	52	52
Date of hire	01/01/85	01/01/90
Vesting service	27	22
Eligible for early retirement?	YES	YES
Assumed retirement age	58	58
Majority owner?	NO	NO
Vesting percentage	100%	100%

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Problem 25 – Page 2

One point of the problem is that the guaranteed benefit calculations are based on assumed retirement at age 58 for both participants.

	Smith	Jones
5 year average compensation	125,000	80,000
MGB at 65 (life annuity)	4,653.41	4,653.41
Assumed retirement age	58	58
MGB reduced for retirement age	$4,653.41 * .57$ = 2,652.44	$4,653.41 * .57$ = 2,652.44

The reduction factor of 57% for the MGB for age 58 is from the tables given with the exam.

01/01/90 plan benefit	$1.5\%(27)(125,000)/12$ = 4,218.75	$1.5\%(22)(80,000)/12$ = 2,200.00
Early retirement benefit, reduced 3% per year before 65	$4,218.75 * (1 - 3\%*7)$ = 3,332.81	$2,200.00 * (1 - 3\%*7)$ = 1,738.00
Early retirement benefit < MGB	2,652.44	1,738.00
Guaranteeable benefit increase	2,652.44	1,738.00
Years plan has been in effect	5	5
Phase-in at 100%	2,652.44	1,738.00

“03/01/09” plan benefit	Limited to MGB	$2.5\%(22)(80,000)/12$ = 3,666.67
Early retirement benefit, reduced 5% per year before 65	Limited to MGB	$3,666.67 * (1 - 3\%*7)$ = 2,896.67
Early retirement benefit < MGB	2,652.44	2,652.44
Guaranteeable benefit increase	$2,652.44 - 2,652.44$ = zero	$2,652.44 - 1,738.00$ = 914.44
Years plan has been in effect	2	2
Phase-in: Greater of \$40 or 40%(GBI)	= zero	\$40 or 914.44(40%)
	Note - can't exceed GBI	= 365.78
Total guaranteed benefit	$2,652.44 + \text{zero}$ = 2,652.44	$1,738.00 + 365.78$ = 2,103.78

Each participant's PC4 benefit is the same as their guaranteed benefit under the 5 year phase-in rules. Now you need to calculate the present value of the PC4 benefits:

$$\begin{aligned}
 \text{PV of PC4} &= 12(2,652.44)(10.55) + 12(2,103.78)(10.55) \\
 &= 335,799 + 266,338 \\
 &= 602,138
 \end{aligned}$$

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Problem 25 – Page 3

The market value of assets is greater than the present value of the PC4 benefits by 47,862 (equal to 650,000 - 602,138). The next step is to determine the benefits in ERISA 4044 Priority Category 5. In general, the total benefit through PC5 is equal to the vested accrued benefit.

The total PC5 benefit is the excess of the vested accrued benefit over the PC4 benefit. But you have to break the PC5 benefit into several layers, which is the key point of the problem. The asset allocation to the PC5 benefit is actually done in multiple steps. This is described in the PBGC regulations at 4044.10(e).

You first determine the vested accrued benefit under the five year old plan, and calculate the excess (if any) of that amount over the PC4 benefit. Assets are allocated to this layer first. If any assets remain, then you determine the vested accrued benefit under the next plan, and calculate the second layer of the PC5 benefit.

	Smith	Jones
01/01/90 plan benefit	$1.5\%(27)(125,000)/12$ = 4,218.75	$1.5\%(22)(80,000)/12$ = 2,200.00
Early retirement benefit, reduced 3% per year before 65	$4,218.75 * (1 - 3\%*7)$ = 3,332.81	$2,200.00 * (1 - 3\%*7)$ = 1,738.00
“Vested accrued benefit”	3,332.81	1,738.00
PC4 benefit	2,652.44	1,738.00
First layer of PC5 benefit	$3,332.81 - 2,652.44$ = 680.37	$1,738.00 - 1,738.00$ = zero

Now you can calculate the present value of the first layer of PC5 benefits:

$$\begin{aligned}\text{PV of PC5} &= 12(680.37)(10.55) \\ &= 86,135\end{aligned}$$

Since this exceeds the remaining assets, Smith gets a partial allocation of the first layer of the PC5 benefit, and Jones gets none. The total assets allocated to Smith are 383,662. This is the sum of 335,799 for PC4, plus the remaining assets of 47,862.

Answer is D

(see notes on next page)

Problem 25 – Page 4

NOTES

1. This question was hotly debated immediately after the exam. Many students tried to read too much into the definition of X:
“X = the present value of the benefit Smith will receive from the PBGC ...”

Based on the calculations above, the benefit is provided entirely from the plan’s assets. Some students interpreted this as meaning that the value of X was actually zero. But there is a catch - this is a distress termination. The PBGC actually takes over the plan’s liabilities and assets. Smith’s benefit really is paid by the PBGC.

I think it is highly sketchy to assume that a 5 point question on the exam requires no calculations because “the answer is obviously zero”.

2. The PC4 benefit is defined as the guaranteed benefit under the 5 year phase-in rules. If either participant was a majority owner, and the original plan was in effect less than 10 full years, then their guaranteed benefit would be smaller than the PC4 benefit.

2012 EA-2B Exam Solutions

Problem 26

Similar to 2011 #22

Revised 02/16/16

§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 either

- The employer establishes a “qualified replacement plan”, or
- The employer grants certain benefit increases prior to plan termination.

The general definition of a qualified replacement plan includes 95% participation by continuing employees from the terminating plan, plus an asset transfer of at least 25% of the excess assets. You can reduce the 25% asset transfer by the value of benefit improvements made within the 60 days ending on the date of plan termination.

As described above, unless the plan sponsor takes action, the excise tax is 50%. You can calculate the value of Y, allowing for the 5% benefit increase:

$$\begin{aligned}\text{Excise tax} &= Y = 50\%[2,100,000 - 1.05(1,600,000)] \\ &= 210,000\end{aligned}$$

The problem states that the plan sponsor makes the minimum asset transfer to a qualified replacement plan, which is 25% of the initial reversion. This asset transfer can be reduced by the amount of the 5% benefit increase.

$$\begin{aligned}\text{Asset transfer} &= 25\%[2,100,000 - 1,600,000] - 5\%(1,600,000) \\ &= 45,000\end{aligned}$$

As a result of the asset transfer, the excise tax is reduced to 20%. The excise tax is calculated using the remaining assets after the transfer to the qualified replacement plan:

$$\begin{aligned}\text{Excise tax} &= X = 20\%[2,100,000 - 1.05(1,600,000) - 45,000] \\ &= 75,000\end{aligned}$$

The absolute value of X minus Y is 135,000.

Answer is B

NOTE

Instead of establishing a “qualified replacement plan”, the plan can grant benefit increases at plan termination to reduce the excise tax. The benefit improvements must meet three criteria:

- Present value \geq 20% of the reversion (prior to the benefit changes)
- Uniform for all participants
- Benefit increases for non-active participants can not exceed 40% times [20% of the reversion (prior to the benefit changes)]

The 5% benefit increase is much lower than 20% of the initial reversion. The only way the plan sponsor could reduce the excise tax below 50% was to make the asset transfer.

2012 EA-2B Exam Solutions

Problem 27

Revised 03/14/14

The key to working this question is understanding the cross testing rules. The problem asks for the benefit percentage on an equivalent allocation basis for the 410(b) average benefits test. This calculation requires you to aggregate the results for both plans.

The problem does not state the testing method. Since the problem asks for the “benefit percentage determined on an equivalent allocation basis”, you must test the DB plan on a contributions basis. The only method you can use is the annual method.

This problem asks for the sum of Smith’s and Jones’ benefit percentage values for the average benefit percentage test (ABPT). The ABPT calculations require you to aggregate the DB and DC plans. Since you have no choice about aggregating the plans for the ABPT, you do not have to satisfy the DB/DC gateways.

The problem asks for the benefit percentage on an equivalent allocation basis. You need to cross test the DB plan on a contributions basis to determine the equivalent allocation rate. When you add the DB plan equivalent allocation rate to the DC plan allocation rate, you have the aggregate allocation rate for the ABPT.

	Smith	Jones
Birth date	12/31/1950	12/31/1980
12/31/2011 age	61	31
Pay limited by 401(a)(17)	245,000	60,000
DB Annual accrual	15,000	4,000
Lump sum value at 65	$15,000(9.88) = 148,200$	$4,000(9.88) = 39,520$
Discounted value at 7.5%	$148,200(1.075)^{-4}$ $= 110,972$	$39,520(1.075)^{-34}$ $= 3,380$
401(k) salary deferral	10,000	4,000
401(m) employer match	5,000	2,000
Profit sharing allocation	2,500	2,500
Total allocation	128,472	11,880
Allocation rate	$128,472 / 245,000$ $= 52.44\%$	$11,880 / 60,000$ $= 19.80\%$

The sum of the equivalent allocation rates is 72.24%.

Answer is D

NOTE

One minor point of the problem is that you must include the 401(k) deferrals in the calculations for the 410(b) ABPT. 401(m) and 401(k) plans are usually disaggregated for nondiscrimination testing - but there is a special rule for the 410(b) ABPT that requires you to aggregate these plans with all the rest. If the problem had asked for the equivalent allocation rate for testing under 401(a)(4), then you would exclude the 401(k) deferrals from the calculations. The reason is that 401(k) deferrals are subject to a separate test under 401(a)(4).

2012 EA-2B Exam Solutions

Problem 28

Revised 03/14/14

This is the second question asked on the EA exams which required knowledge of the mechanics of a cash balance plan (A.K.A. applicable defined benefit plan).

The key idea is that you accumulate the current account balance each year and add in a new pay credit. The problem gives you the historical asset returns. With 50,000 of pay, each year the 3% pay credit is 1,500:

Year	Beg year account	Asset Return	Pay Credit	12/31 account	Pay + Interest Credits
2008	0	8.00%	1,500.00	1,500.00	$= 1,500 + 1.08*0$
2009	1,500.00	6.00%	1,500.00	3,090.00	$= 1,500 + 1.06*1,500.00$
2010	3,090.00	2.00%	1,500.00	4,651.80	$= 1,500 + 1.02*3,090.00$
2011	4,651.80	-22.00%	1,500.00	5,128.40	$= 1,500 + .78*4,651.80$

The key point of the problem is that the final account value can not be that small. The “preservation of capital” provision in IRC 411(b)(5)(B)(i)(II) states that the account balance can never be less than the sum of the contributions credited to the account.

As a result, the 12/31/2011 account balance must be $6,000 = 4*1,500$. The minimum vesting schedule for applicable defined benefit plans is 100% vesting after three years. Since Smith has four years of service, the vested account balance is also 6,000.

Answer is D

2012 EA-2B Exam Solutions

Problem 29

Similar to 2008 EA-2A #28

This is a simplified problem on IR 415. Starting in 1997, earnings under §415 is defined as total compensation (not taxable). Based on the regulation that became final in 2007, earnings under §415 are subject to the §401(a)(17) limit.

At 12/31/12

Age	49
Service	5 years
Participation	5 years

PLAN BENEFIT

The plan benefit is based on the three year final average pay. You need to apply the §401(a)(17) limit to each year of pay:

Year	Total Pay	401(a)(17) limit	Limited Pay
2010	210,000	245,000	210,000
2011	275,000	245,000	245,000
2012	300,000	250,000	250,000

$$\begin{aligned} \text{3 year final average pay} &= (210,000 + 245,000 + 250,000) / 3 \\ &= 235,000 \end{aligned}$$

$$\begin{aligned} \text{Accrued benefit} &= 235,000 * 5 * 10\% \\ &= 117,500 \end{aligned}$$

By definition, the accrued benefit is assumed payable at normal retirement age (age 65 under the default exam conditions).

415 COMP LIMIT

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

$$\begin{aligned} \text{\$415 compensation limit} &= [(210,000 + 245,000 + 250,000) / 3] * (5/10) \\ &= 117,500 \end{aligned}$$

415 DOLLAR LIMIT

Under §415(b)(1)(A), the dollar limit is reduced when participation is less than ten years.

$$\begin{aligned} \text{\$415 dollar limit during 2012} &= 200,000 * (5/10) && \text{for ages 62-65} \\ &= 100,000 \end{aligned}$$

The final plan benefit is equal to the 415 limit of 100,000.

Answer is B

2012 EA-2B Exam Solutions

Problem 30 – Page 1

Similar to 2008 #22

Revised 02/28/14

This problem gives you information about two plans. Plan A covers employees in Division A, and has an eligibility requirement of 12 months of service. Plan B covers employees in Division B, and has an eligibility requirement of 6 months of service.

This problem tests your ability to calculate the Ratio Percentage test for two plans with differing eligibility requirements. The ratio percentage is defined under the regulations at §1.410(b)-9 as the percentage of non-highly compensated employees (NHCEs) who benefit under the plan divided by the percentage of highly compensated employees (HCEs) who benefit under the plan:

$$\text{Ratio \% test: } \frac{\left(\frac{\text{Non-HCEs who benefit}}{\text{Total Non-excludable non-HCEs}} \right)}{\left(\frac{\text{HCEs who benefit}}{\text{Total Non-excludable HCEs}} \right)}$$

The percentage of NHCEs who benefit under the plan equals the number of NHCEs in the plan divided by the total number of non-excludable NHCEs. The percentage of HCEs who benefit under the plan equals the number of HCEs in the plan divided by the total number of non-excludable HCEs.

If the employer elects to aggregate plans, you would use the employees benefiting under both plans for the numerator in the ratio percentage test. There are some complicated rules in the 1.410(b)-7 regulation that govern when you can voluntarily aggregate plans, as well as when you must mandatorily disaggregate plans.

The ratio denominators should be based on counts for the entire controlled group, not just for the single plan being tested. In general, the excludable employees include those who do not meet the minimum participation requirements, collectively bargained employees, and nonresident aliens.

In this problem, you are told that the plan sponsor elects not to aggregate the two plans for nondiscrimination testing. There are several key points to this problem:

- (1) The number of employees benefiting in plan A is based on plan A's eligibility requirements, which is 12 months of service
- (2) The number of employees who are excludable based on age and service is based on those employees who do not satisfy plan A's eligibility requirements

Plan B only covers employees in Division B. This means that employees in Division B are non-excludable when determining the ratio percentage for Plan A.

There are many definitions of an excludable employee in the code and regulations:

- Do not satisfy plan's eligibility (age / service)
- Nonresident aliens
- Collectively bargained employees
- Qualified Separate Lines of Business (QSLOB)
- Terminating employees
- Governmental / tax exempt
- Former employees
- Former employees treated as employees

In this problem, 410(b) testing calculations are done at 12/31/11. For each group of employees, you need to determine the date of entry. If they are not eligible to participate in 2011, they are excludable. The problem states that the "Otherwise excludable employees" are not tested separately.

Division A employees

<u>Number of Employees</u>	<u>Date of Hire</u>	<u>2011 Hours</u>	<u>Division</u>	<u>End of year Status</u>	<u>HCE?</u>	<u>Plan A Entry date</u>
20	1/1/2010	2,000	A	active	HCE	1/1/2011
40	1/1/2010	2,000	A	active	NHCE	1/1/2011
5	1/1/2010	250	A	terminated	NHCE	1/1/2011

The first two groups are benefiting under Plan A, and they are non-excludable. The five terminated employees are not benefiting, and they are excludable. The reason is that they satisfy all six criteria in 1.410(b)-6(f)(1):

1. Employee does not benefit under the plan for the year
2. Employee is eligible to participate
3. The plan has a minimum period of service, or a requirement of being employed on the last day to receive an allocation
4. Employee fails to receive an allocation due to failure to satisfy item 3
5. Employee terminates with no more than 500 hours, and is not an employee on last day of the plan year
6. If this paragraph is applied to any employee, it is applied to all employees for the year

Division B employees

<u>Number of Employees</u>	<u>Date of Hire</u>	<u>2011 Hours</u>	<u>Division</u>	<u>End of year Status</u>	<u>HCE?</u>	<u>Plan A Entry date</u>
10	1/1/2010	2,000	B	active	HCE	1/1/2011
25	1/1/2010	2,000	B	active	NHCE	1/1/2011
15	9/1/2010	2,000	B	active	NHCE	1/1/2012
10	1/1/2010	250	B	terminated	NHCE	1/1/2011

None of these employees are benefiting, since they are in Division B. Plan A only covers employees in Division A.

The 15 employees hired at 09/01/2010 are excludable, since they do not enter the plan until 2012. This is based on plan A's eligibility requirements, which is 12 months of service. Everyone else is non-excludable, and will be used in the denominator of the ratio percentage test for Plan A.

The key point of the problem is that the 10 employees who terminated are not excludable. The reason is that they are not participants of Plan A, so they don't satisfy the second criteria in 1.410(b)-6(f)(1).

For Plan A there are 20 non-excludable HCEs benefiting, and 40 non-excludable NHCEs benefiting. For Plan B there are 10 non-excludable HCEs, and 35 non-excludable NHCEs. Now you can calculate the ratio percentage test result for plan A.

$$\begin{aligned}\text{Total ratio \%} &= \frac{40 / (40+35)}{20 / (20+10)} \\ &= 80.0\%\end{aligned}$$

Answer is C

Problem 31

Similar to 2005 #38

Revised 04/26/13

This problem tests the 2011 changes in the regulations concerning performance of services by enrolled actuaries.

I. TRUE

This is virtually a direct quote of 901.20(d)(1)(ii), which defines “conflict of interest”.

II. FALSE

In 901.20(d)(2), it states that a conflict of interest does not prevent an actuary from performing services:

“The enrolled actuary may represent a client if

- (i) The enrolled actuary reasonably believes that he or she will be able to provide competent and diligent representation to each affected client;*
- (ii) The representation is not prohibited by law; and*
- (iii) Each affected client waives the conflict of interest and gives informed consent at the time the existence of the conflict of interest is known by the enrolled actuary.”*

This item is false, since the actuary apparently did not disclose the conflict of interest - and the clients did not waive the conflict of interest.

III. FALSE

The description almost sounds correct, based on the description in item II. But it contradicts 901.20(d)(2)(i), since the actuary “does not reasonably believe he can provide competent and diligent representation”.

Only item I is true.

Answer is E

2012 EA-2B Exam Solutions

Problem 32

Similar to 2009 #25

Under the Rolling Five Method, the calculation of withdrawal liability is relatively simple. The only potential trick to the problem is that this plan uses the “optional” de minimis rule instead of the mandatory de minimis rule. The phrase “optional de minimis” is confusing, and appears to be a reference to the alternative de minimis rule.

Since the withdrawal occurred during 2011, you should use the UVB at 12/31/2010. You must calculate Employer A's share of the 12/31/10 UVB. This is based on the ratio of Employer A's contributions to the total contributions in the prior five years:

$$\begin{array}{l} \text{YEAR:} \qquad \qquad \qquad 2006 \quad 2007 \quad 2008 \quad 2009 \quad 2010 \\ \\ \text{A's share} = 10,750,000 * \quad \left(\frac{315 + 360 + 376 + 382 + 369}{16,100 + 16,687 + 17,200 + 19,550 + 21,150} \right) \end{array}$$

It is easier to avoid arithmetic errors if you get rid of the extra zeroes in the contribution values.

$$\begin{aligned} \text{ER share} &= 10,750,000 * \frac{1,802}{90,687} \\ &= 213,608 \end{aligned}$$

After determining Employer A'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 alternative de minimis is the lesser of 100,000 or 3/4% of the plan's total UVB:

$$\begin{aligned} \text{De minimis} &= \text{Lesser of } 100,000 \text{ and } .0075 * 10,750,000 \\ &= 80,625 \end{aligned}$$

The deductible is the de minimis amount reduced by the excess of the allocated UVB over 150,000:

$$\begin{aligned} \text{Deductible} &= 80,625 - (213,608 - 150,000) \\ &= 17,017 \end{aligned}$$

The final employer withdrawal liability is the employer share minus the deductible, or 196,592 (which equals 213,608 - 17,017).

Answer is D

NOTE

The mandatory de minimis is the lesser of 50,000 or 3/4% of the plan's total UVB. The deductible is the de minimis amount reduced by the excess of the allocated UVB over 100,000. Once the employer share reaches 150,000, the deductible becomes zero.

2012 EA-2B Exam Solutions

Problem 33

This question tests a few details in the IRC 436 regulation. At 03/15/2012, the 2012 AFTAP was certified as 77.07%. As a result, there is no presumed AFTAP for 2012, and no reduction at 04/01/2012.

The plan sponsor will make an additional IRC 436 contribution to allow the plan amendment to take effect. Since the AFTAP prior to the amendment is less than 80%, the contribution is equal to the increase in the funding target due to the plan amendment. One point of the problem is that the required contribution paid at 07/01/2012 must be larger than the increase in the funding target, since it is not paid at the valuation date.

The IRC 436 contribution is adjusted to reflect the later date of payment. Since the contribution is for the 2012 plan year, it is discounted using the 2012 effective interest rate, which is 6%.

If the IRC 436 contribution was paid at 01/01/2012, it would be 800,000. You need to reflect the actual payment date of 07/01/2012.

Let X represent the IRC 436 contribution paid at 07/01/2012:

$$\Delta FT = 800,000 = X(1.06)^{-6/12}$$

$$\begin{aligned} X &= 800,000(1.06)^{6/12} \\ &= 823,650 \end{aligned}$$

Answer is E

NOTES

1. You could use simple interest in the calculation. This gives a contribution value of $824,000 = 800,000(1 + .06(6/12))$, which is in the same answer range.
2. In 2010 exam question 38, there were two additional points to the question:
 - That plan was in at-risk status, so you used the change in the funding target on the at-risk basis.
 - The valuation had not been completed, so the effective interest rate was unknown. Based on 1.436-1(f) example 3, you must use the highest of the three segment rates for the year to discount the 436 contribution back to the valuation date.
3. You can check the certified AFTAP using the data values given

$$\begin{aligned} 2012 \text{ AFTAP} &= (AAV - CB - PB) / FT \\ &= (3,160,000 - 0 - 0) / 4,100,000 \\ &= 77.07\% \end{aligned}$$

2012 EA-2B Exam Solutions

Problem 34

Similar to 2005 #19

Missing participant calculations have not been tested in many years. This is so old, it is almost a “trick question”.

Section 4050 of ERISA contains rules regarding missing participants. In the regulation at 4050.5(a), it describes the amount of the “designated benefit” for four different cases:

- 4050.5(a)(1) Mandatory lump sum - Present value under plan assumptions
- 4050.5(a)(2) De minimis lump sum - Present value < 5,000 under missing participant lump sum assumptions
- 4050.5(a)(3) No elective lump sum - Present value at deemed distribution date under missing participant annuity assumptions
- 4050.5(a)(4) Elective lump sum - greater of values under (a)(1) and (a)(3)

Under 4050.5(b), the present value must be determined as the most valuable benefit. In this problem, you are simply given the present values. Since the plan lump sum exceeds the 5,000 threshold under 411(a)(11)(A), case 4050.5(a)(1) does not apply. Since the PBGC missing participant lump sum exceeds 5,000, case 4050.5(a)(2) does not apply.

The participant is eligible for the plan elective lump sum, so they fall under 4050.5(a)(4). The value of the designated benefit is the greater of the (a)(1) and (a)(3) values.

Under (a)(1), the plan lump sum is 5,600. Under (a)(3), the final value is 5,800 - after adding the 300 expense load. The greater of the two values is 5,800.

Answer is C

NOTES:

1. For benefits not in pay status, the most valuable benefit is the benefit at the benefit commencement age that produces the highest present value as of the deemed distribution date (using the missing participant annuity assumptions.)
2. In 4050.2, the missing participant annuity assumptions are defined as the assumptions and methods under section 4044.52, applied as if the deemed distribution date were the termination date. You do not use the expected retirement age assumptions under 4044. In lieu of the expense adjustment under 4044.52(e), you must add \$300 as an expense load for each missing participant whose benefit liability would exceed 5,000 without the expense loading applied.
3. Any missing participant not in pay status at the deemed distribution date is assumed to be married to a spouse the same age, and their benefit must be valued under the QJ&SA form payable under the plan. If they were already in pay status, you would use the form of benefit and beneficiary of the pay status benefit.

2012 EA-2B Exam Solutions

Problem 35

This question tests your knowledge of the requirements of the Internal Revenue Code and ERISA regarding fiduciary standards. Many similar items have appeared in True/False questions on prior exams.

I. TRUE

According to ERISA, a fiduciary is any person so named in the plan document or any person who exercises any discretionary authority or control with respect to the management or administration of the plan or its assets. See IRC Section 4975(e)(3).

II. TRUE

The only requirement (in ERISA Section 402(a)) is that there is at least one named fiduciary. There is no maximum number.

III. FALSE

There is no specific requirement in the law. Instead, allowance is made for a choice between annuities that have nearly the same level of safety, but a large difference in cost.

In section (d) of DOL Interpretive Bulletin 95-1, it states:

"The Department recognizes that there are situations where it may be in the interest of the participants and beneficiaries to purchase other than the safest available annuity. Such situations may occur where the safest available annuity is only marginally safer, but disproportionately more expensive than competing annuities, and the participants and beneficiaries are likely to bear a significant portion of that increased cost."

Only items I and II are True.

Answer is B

2012 EA-2B Exam Solutions

Problem 36 – Page 1

Similar to 2003 #29

In general, the Top Heavy (T-H) 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 determination date is 12/31/2012 for the 2013 T-H ratio.

Based on questions T-24 and T-25 of the 1.416 regulation, the present value of accrued benefits for the DB plan (or account balance for the DC plan) is calculated as of the valuation date in the 12 month period ending on the determination date. In this problem, it appears the valuation date is 12/31 (since the present value is given at 12/31).

You should add together the present value of vested and non-vested accrued benefits as of that date for all participants. The amounts should exclude values for terminated employees who have not been employed in the 12 months ending on the determination date, or values for former key employees. Since participant 9 terminated during 2011, they are not included in the Top Heavy determination at 12/31/2012.

The key point to this problem is that these amounts should include distributions (including benefit payments) within the 12 months ending on the determination date. These amounts should also include any in-service distributions within the 5 years ending on the determination date.

A secondary point of the problem is that you must identify the key employees. There are three definitions in IRC 416(i):

- Officer with 2012 compensation greater than 165,000
- 5% owner
- 1% owner with 2012 compensation greater than 150,000

Participants 1 and 5 are the only officers. They are both key employees because their stock ownership exceeds 5%. Participants 3 and 4 have more than 1% stock ownership. Participant 3 is a key employee, since they also have compensation in excess of 150,000.

Partic #	Status	Prior Distributions	12/31/12 PV of accrued benefit	Total
1	Key ee	50,000	200,000	250,000
2	Non-key	0	30,000	30,000
3	Key ee	0	80,000	80,000
4	Non-key	0	50,000	50,000
5	Key ee	0	60,000	60,000
6	Non-key	60,000	20,000	80,000
7	Non-key	40,000	40,000	80,000
8	Non-key	0	30,000	30,000

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Problem 36 – Page 2

The problem states that all the participants are employed during 2011 and 2012. Since they are actively employed, the distributions shown are in-service distributions. You must include all of those distributions in the values used to determine the T-H ratio.

Key employees: 1, 3 and 5

$$390,000 = 250,000 + 80,000 + 60,000$$

Non-Key employees: 2, 4, 6, 7 and 8

$$270,000 = 30,000 + 50,000 + 80,000 + 80,000 + 30,000$$

The Top Heavy ratio for 2013 is

$$59.09\% = 390,000 / (390,000 + 270,000)$$

Answer is C

2012 EA-2B Exam Solutions

Problem 37 – Page 1

Similar to 2010 EA-2A #9

This is a straightforward problem on calculating the Top Heavy (T-H) minimum. The first step in the problem is calculating the accrued benefit under the plan formula. Then you calculate the T-H minimum to see if it is larger.

12/31/2011 data

Age	61
Past service	14

The plan benefit is calculated using the final three year average earnings:

$$\begin{aligned}\text{FAE3} &= (68,000 + 90,000 + 90,000) / 3 \\ &= 82,666.67\end{aligned}$$

$$\begin{aligned}\text{Plan benefit} &= 82,667 * (1.0\%) * (14) \\ &= 11,573\end{aligned}$$

The T-H minimum is based on years the plan has been T-H. The plan has been T-H for twelve years from 1998 through 2009. The problem does not tell you the T-H averaging period. Based on IRC 416(c)(1)(D)(1), the T-H averaging period can not exceed five consecutive years. In the absence of any specific data in the problem, you should assume the plan uses a T-H averaging period of five years.

The T-H minimum benefit is calculated using the highest five year average earnings from hire date up through the end of the last year that the plan was Top Heavy. It appears the T-H pay is based on the five years from 2004 through 2008. You can't use the highest years of pay, since the plan was not T-H for 2010 or 2011:

$$\begin{aligned}\text{2004-2008} & \\ \text{FAE5} &= (72,000 + 72,000 + 75,000 + 65,000 + 75,000) / 5 \\ &= 71,800.00\end{aligned}$$

The participant has been employed for all years that the plan was T-H. The T-H minimum is based on years the plan has been T-H, with a maximum of 10 years:

$$\begin{aligned}\text{T-H min} &= 71,800 * (2.0\%) * (10) \\ &= 14,360\end{aligned}$$

Smith's final accrued benefit is the greater of the plan benefit and the T-H minimum, or 14,360.

Answer is B

(see notes on next page)

Problem 37 – Page 2

NOTES

1. The definition of T-H pay in IRC 416(c)(D) is really vague. My interpretation has always been that the T-H pay is updated each time the plan is found to be T-H. You look back at ALL years prior to the last year that the plan was Top Heavy, and find the five highest consecutive years. This period includes years that the plan is NOT Top Heavy.
2. The code (and regulation) state that if any service is disregarded under IRC sections 411(a)(4), (5), or (6), then for the top heavy minimum benefit, salary paid for those years is ignored. But 411(a) concerns vesting service – not benefit accrual service.
3. Questions can get tricky when they specify the plan's effective date. Years of service before the plan effective date can be excluded for vesting purposes, and this would affect the T-H pay calculation. You need to read the question carefully - for example, the problem could use language similar to this: "the plan credits the minimum amount of vesting service" or "the plan credits vesting service using the most restrictive rules allowed".

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Problem 38 – Page 2

Revised 02/16/16

Mandated basis reduction factor

Here is the short version of what you need to know. If you want to see the long version, check out the notes at the end of the solution to this problem.

Actuarial decrease factor for 415 dollar limit, based on mandated 5%, applicable mortality

Death benefit definition	Factor
Waived QPSA, or NO death benefit (complete forfeiture on death)	$N_{62}^{(12)} / N_X^{(12)}$
QPSA death benefit, and plan charges participants for cost of QPSA (default per 2010 exam condition 9)	$N_{62}^{(12)} / N_X^{(12)}$
100% of PV of accrued benefit (no forfeiture on death)	$v^{62-X} (\ddot{a}_{62}^{(12)} / \ddot{a}_X^{(12)})$
QPSA death benefit, and plan does NOT charge for cost of QPSA (treat as no forfeiture on death)	$v^{62-X} (\ddot{a}_{62}^{(12)} / \ddot{a}_X^{(12)})$

You are told that the plan's death benefit is 100% of the present value of the accrued benefit. This means that a forfeiture does NOT occur upon the death of a participant, and you must ignore pre-retirement mortality in the actuarial reduction prior to age 62.

Mandated basis reduction factor

$$\begin{aligned}\text{Actuarial reduction from 62 to 60} &= (1.05)^{-2} (\ddot{a}_{62}^{(12)} / \ddot{a}_{60}^{(12)}) \\ &= .9070(12.98/13.56) \\ &= .8682\end{aligned}$$

Plan basis reduction factor

The problem states that the early retirement benefit is the actuarial equivalent benefit under the plan basis. The plan basis reduction factor is defined the same as that for the 415 dollar limit. The main difference is that the plan factor uses a 7.5% interest rate:

$$\begin{aligned}\text{Actuarial reduction from 62 to 60} &= (1.075)^{-2} (\ddot{a}_{62}^{(12)} / \ddot{a}_{60}^{(12)}) \\ &= .8653(10.50/10.84) \\ &= .8382\end{aligned}$$

The plan basis and the 415 dollar limit are both defined as the actuarial equivalent using the same applicable mortality table. You do not need to calculate the mandated basis reduction factor, since the higher interest rate (plan basis) will always produce a lower factor.

Final 415 limit

$$\begin{aligned}\$415 \text{ dollar limit at age 60} &= 140,000 * \text{lesser of } [.8682 \text{ or } .8382] \\ &= 117,347\end{aligned}$$

Problem 38 – Page 3**Revised 02/16/16****Final 415 limit - continued**

Life annuity §415 limit at 60

= lesser of 3 year comp limit and dollar limit
= lesser of 120,000 and 117,347
= 117,347

Answer is A**NOTE****Actuarial reduction of 415 dollar limit below age 62 (LONG version)**

If the plan document does not define a life annuity at both age 62 and the early retirement age, then the §415 dollar limit is reduced using a single factor calculated based on the mandated mortality and interest rate. If the plan does define a life annuity benefit at both ages, then the §415 dollar limit is reduced using the lower of two factors:

1. Actuarial reduction factor based on the mandated mortality and interest rate, and
2. The ratio of the plan's life annuity benefit at the early retirement age divided by the plan's life annuity benefit at age 62, both ignoring the 415 limits

The definition of the actuarial equivalent reduction factor (on the mandated mortality and interest rate) will vary depending on the definition of the death benefit. If there is no forfeiture on death, then you can ignore pre-retirement mortality:

$$v^{62-x}(\ddot{a}_{62}^{(12)} / \ddot{a}_x^{(12)})$$

If the death benefit is defined as 100% of the present value of the accrued benefit, then there is no forfeiture upon death. In 1.415(b)-1(e)(3), it states that you may treat a typical Qualified Pre-retirement Survivor Annuity (QPSA) death benefit as resulting in no forfeiture on death. This treatment is only allowed if the plan does not charge for the cost of the QPSA, and if the plan applies the same treatment for all retirement ages (both before age 62 and after age 65).

If there is a forfeiture on death, then you must reflect pre-retirement mortality:

$$(N_{62}^{(12)} / N_x^{(12)}) = v^{62-x} p_x(\ddot{a}_{62}^{(12)} / \ddot{a}_x^{(12)})$$

If there is no death benefit, then there is a full forfeiture upon death. This can happen if the participant is single, or if they are married, and they elect out of the Qualified Pre-retirement Survivor Annuity (QPSA). With a typical QPSA death benefit, there will be a forfeiture on death. Based on exam condition 12, in the absence of any other information, you should assume that the plan does charge the participants for the cost of the QPSA.

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Problem 38 – Page 4

Actuarial reduction of 415 dollar limit below age 62 - continued

Actuarial decrease factor for 415 dollar limit, based on mandated 5%, applicable mortality

Death benefit definition	Factor
Waived QPSA, or NO death benefit (complete forfeiture on death)	$N_{62}^{(12)} / N_X^{(12)}$
QPSA death benefit, and plan charges participants for cost of QPSA (default per exam condition 12)	$N_{62}^{(12)} / N_X^{(12)}$
100% of PV of accrued benefit (no forfeiture on death)	$v^{62-x} (\ddot{a}_{62}^{(12)} / \ddot{a}_X^{(12)})$
QPSA death benefit, and plan does NOT charge for cost of QPSA (treat as no forfeiture on death)	$v^{62-x} (\ddot{a}_{62}^{(12)} / \ddot{a}_X^{(12)})$

Problem 39 – Page 1**Revised 04/23/18**

This is almost a typical PBGC guaranteed benefits question. This question tests your knowledge of the five year phase-in calculations. The one unusual aspect is that this plan has a distress termination while in bankruptcy.

Based on the PBGC regulation at 4022.3(b)(1), the guaranteed benefit calculations use the bankruptcy date of 01/01/2009 as the date of plan termination. This affects all the phase-in calculations, as well as the age, service and vesting of the participants. This is the first exam question to test this idea.

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.

The PBGC maximum monthly guaranteed benefit (MGB) is defined as the lesser of the adjusted ERISA §4022(b) value, or the highest five year consecutive compensation. The MGB is defined assuming payment on a life annuity basis at age 65.

One point of the problem is that you use the 2009 MGB value, since the termination date is assumed to be 01/01/2009. The 2009 MGB at 65 is 4,500.00 (from the tables given with the exam).

The 01/01/2007 plan has been in effect for two full years at the 01/01/2009 DOPT.

	Smith: 5 year phase-ins	Jones: 5 year phase-ins
Date of birth	01/01/55	01/01/80
01/01/2009 age	54	29
Date of hire	01/01/90	01/01/05
Past service	19	4
Majority owner?	NO	NO
Vesting percentage	100%	0%

The key point of the problem is that there are no guaranteed benefits for Jones. Since they had less than 5 years of service at 01/01/2009, they were not vested. For Smith, the guaranteeable benefit at the earliest retirement age is calculated at age 65. Since they only have 19 years of service at 01/01/2009, they were not eligible for early retirement benefits.

Pre-2007 Base plan benefit	50(19) = 950.00
Guaranteeable benefit increase	950.00
Years plan has been in effect	5
Phase-in	950.00

2012 EA-2B Exam Solutions

Problem 39 – Page 2

01/01/2007 Base plan benefit	$100(19)$ $= 1,900.00$
Guaranteeable benefit increase	$1,900.00 - 950.00$ $= 950.00$
Years plan has been in effect	2
Phase-in: Greater of \$40 or 40%(GBI)	$\$40 \text{ or } 950.00(40\%)$ $= 380.00$
Total guaranteed benefit	$950.00 + 380.00$ $= 1,330.00$

Answer is B

NOTES

1. The MGB does not increase beyond the year of plan termination. See Example 13 in Appendix A of the PBGC study note.
2. You should use the later of age at DOPT and age at benefit commencement for purposes of adjusting the MGB for age. See Example 16 in Appendix A of the PBGC study note.
3. You should use the form of payment in effect at the later of age at DOPT and age at benefit commencement for purposes of adjusting the MGB for form of payment. See Example 18 in Appendix A of the PBGC study note.
4. For retirements after DOPT, all benefit service accruals ceased at DOPT.
5. When calculating the phase-ins, the percent is more valuable when the amount of the Guaranteeable benefit increase exceeds 100. If it is less than 100, then the fixed dollar amount is more valuable. At 100, they both produce the same result.
6. If there were 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.
7. In some problems, plan amendments have different effective dates and adoption dates. For purposes of measuring the years that each set of plan provisions was effective, you use the later of the effective date and the adoption date. In the absence of any other information, you can assume both dates are the same (based on 2012 exam condition 12).

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Problem 40 – Page 1

Similar to 2010 #35

This is a very simple problem on calculating the variable rate premium (VRP). The key point is handling of the receivable contributions.

The variable rate premium is calculated based on the unfunded vested benefits liability. This is defined as the excess of the premium funding target over the adjusted market value of assets. In this problem, you are given the Standard Premium Funding Target at 01/01/2012. The problem states that an election was not made to use the Alternative Premium Funding Target.

You must use the market value of assets at 01/01/2012. Since the market value excludes receivable contributions, you must add the discounted value of contributions paid for plan years prior to the premium payment year. You only include the receivable if it has been deposited on or before the date the variable rate premium is paid. There is a potential trick to this problem, since it does not tell you the actual filing date.

The filing deadline for this plan varies depending on the plan size. It is either 10/15/2012 or 04/30/2013. Since both of the 2011 plan year contributions are paid prior to these dates, they should be included in the asset value.

The interest rate used for discounting the receivable contribution is the effective interest rate for the plan year that corresponds to the receivable contribution. In this problem, that is the 2011 plan year. The interest rate used for discounting is 6.25%:

$$\begin{aligned}\text{Unadjusted Market value} &= 76,000,000 \\ \text{Adjusted market value} &= 76,000,000 + 800,000(1.0625)^{-3.0/12} \\ &\quad + 4,500,000(1.0625)^{-8.5/12} \\ &= 81,098,816 \\ \text{Premium funding target} &= 100,000,000 \\ \text{Unfunded vested liability} &= 100,000,000 - 81,098,816 \\ &= 18,901,184\end{aligned}$$

The unfunded vested liability must be rounded up to the next multiple of 1,000. The last step is to multiply the adjusted value of the unfunded vested liability by .009:

$$\begin{aligned}\text{Variable rate premium} &= 18,902,000 * .009 \\ &= 170,118\end{aligned}$$

Answer is D

(see note on next page)

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Problem 40 – Page 2

NOTE

You could use simple interest to discount the receivable contribution:

$$\begin{aligned}\text{Adjusted MVA} &= 76,000,000 + \frac{800,000}{[1 + .0625(3/12)]} + \frac{4,500,000}{[1 + .0625(8.5/12)]} \\ &= 81,096,919\end{aligned}$$

The resulting variable rate premium is 170,127, which falls in the same answer range.

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Problem 41

Similar to 2011 #30

This question tests your knowledge of the requirements regarding 204(h) notices.

I. FALSE

In general, notice is required for an amendment that either

1. Significantly reduces the rate of future benefit accrual, or
2. Eliminates or significantly reduces early retirement benefits, or a retirement type subsidy

II. TRUE

In IRC 4980F(e)(1)(iii), there is a 204(h) notice required for “applicable individuals”. These are participants who are adversely affected by the plan amendment. In Q&A-10 of the 54.4980F regulation, it states that “applicable individuals” includes beneficiaries who are alternate payees under a QDRO.

III. TRUE

IRC Section 4980F(b)(1) defines the excise tax for failure to file a 204(h) notice. It is equal to \$100 per participant per day in the noncompliance period. The details of the excise tax calculation are contained in the 54.4980F regulation.

Only items II and III are true.

Answer is E

NOTE

Prior exam questions 2004 #21 and 2005 #35 tested the calculation of the amount of the excise tax.

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Problem 42

Similar to 2009 #42

Code section 401(a)(26) contains additional participation requirements beyond those in 410(b). In general, a trust is not qualified unless the plan, on each day of the plan year, benefits the lesser of 50 employees, or 40% or more of the employees of the employer. SBJPA added a floor to the 40%, which is 2 employees - unless there is only one employee, in which case the one employee must be covered.

	Total non-excludable employees	Lesser of 40% or 50 employees	Benefiting employees	Satisfy 401(a)(26)?
Plan I	105	42	40	NO
Plan II	60	24	10	NO
Plan III	100	40	40	YES
Plan IV	150	50	40	YES

There is a trick to this question. Based on the numbers shown for plan IV, it does not appear to satisfy 401(a)(26). But this plan is not subject to 401(a)(26), since it satisfies the exception in the regulation at 1.401(a)(26)-1(b)(1):

- The plan is not Top Heavy
- The plan does not benefit any HCEs
- The plan is not required to be aggregated with any other plan to allow the other plan to pass non-discrimination testing under 401(a)(4) or 410(b)

Plan III and Plan IV both pass 401(a)(26)

Answer is C

NOTE

There is a minor typographical error in the data given for the problem. Underneath “Benefiting employees”, one column is labeled as NCE - that should be HCE instead. This was apparently deemed immaterial, since credit was only given for answer C.

2012 EA-2B Exam Solutions

Problem 43 – Page 1

Similar to 2010 #38

The main point of this problem is calculating the additional contribution under IRC 436 to allow the plan amendment to go into effect. To do this, you must know the rules in the 436 regulation regarding computation of adjusted funding target attainment percentage (AFTAP).

The amount of the additional contribution under IRC 436 is different based on the value of the AFTAP prior to the amendment. If that value is less than 80%, then the contribution must be equal to the increase in the funding target due to the plan amendment. If the AFTAP is at least 80% prior to the amendment, then the contribution must be sufficient to bring the AFTAP up to 80% after reflecting the amendment.

The AFTAP is defined in IRC 436(j)(2), and it is similar to the funding target attainment percentage (FTAP) defined in 430(d)(2). The AFTAP has an adjustment for any non-HCE annuity purchases (NHAP) in the prior two years. The calculation uses the actuarial asset value (AAV), the carryover balance (CB), the prefunding balance (PB), and the non At-Risk funding target:

$$\text{AFTAP} = \frac{\text{NHAP} + \text{AAV} - \text{CB} - \text{PB}}{\text{NHAP} + \text{Funding Target (non At-Risk)}}$$

First you need to calculate the AFTAP prior to the plan amendment. This is the first exam problem which provides information about annuity purchases for prior years:

$$\begin{aligned} \text{2012 AFTAP Pre-amend} &= \frac{(61,000 + 0) + 1,655,000 - 0 - 0}{(61,000 + 0) + 2,000,000} \\ &= 83.2\% \end{aligned}$$

Now you need to calculate the AFTAP after the plan amendment. In some cases, no additional 436 contribution will be required. This is unlikely for an exam question - however, see problem 8 on this exam.

$$\begin{aligned} \text{2012 AFTAP Post-amend} &= \frac{(61,000 + 0) + 1,655,000 - 0 - 0}{(61,000 + 0) + (2,000,000 + 200,000)} \\ &= 75.90\% \end{aligned}$$

The plan sponsor will make an additional IRC 436 contribution to allow the plan amendment to take effect. Assume the contribution is equal to X, paid at the valuation date. One point of the problem is that the required contribution is larger than X, since it is not paid at the valuation date. The IRC 436 contribution is discounted to reflect the later date of payment.

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Problem 43 – Page 2

2012

$$\begin{aligned} \text{AFTAP} &= \frac{(61,000 + 0) + (1,655,000 + X) - 0 - 0}{(61,000 + 0) + (2,000,000 + 200,000)} \\ \text{Post-amend} & \end{aligned}$$

$$= 80.0\%$$

$$X + 1,716,000 = .80(2,261,000)$$

$$X = 92,800$$

If the IRC 436 contribution was paid at 01/01/2012, it would be 92,800. You need to reflect the actual payment date of 09/30/2012. Let Y represent the IRC 436 contribution paid at 09/30/2012. Since this is a 2012 plan year contribution, you must adjust the contribution value with the 2012 effective interest rate:

$$\begin{aligned} 92,800 &= Y(1.056)^{-9/12} \\ Y &= 92,800(1.056)^{9/12} \\ &= 96,671 \end{aligned}$$

Answer is D

NOTE

You could use simple interest to adjust the IRC 436 contribution. This produces a slightly higher result, which also falls in answer range D:

$$\begin{aligned} 92,800 &= Y / [1 + (.056)(9/12)] \\ Y &= 92,800[1 + (.056)(9/12)] \\ &= 96,698 \end{aligned}$$

2012 EA-2B Exam Solutions

Problem 44 – Page 1

Similar to 2008 #31

This is a fairly detailed question on IRC section 401(a)(26). This section contains additional participation requirements beyond those in 410(b). In general, a trust is not qualified unless the plan, on each day of the plan year, benefits the lesser of 50 employees, or 40% or more of the employees of the employer. SBJPA added a floor to the 40%, which is 2 employees - unless there is only one employee, in which case the one employee must be covered.

The question asks how many of the employees may be treated as excludable under 401(a)(26). For each employee, you must determine if they are excludable. The only candidates are the non-resident alien, and any of the salaried employees who do not satisfy the plan's entry requirements.

The key point of this problem is that 1.401(a)(26)-6 allows you to ignore various excludable employees. These include employees who do not satisfy the plan's minimum age and service requirements for eligibility, as well as most other definitions of excludable employees in the 1.410(b) regulation.

Hourly employees are not covered by the plan, but they must be treated as non-excludable. The reason is that employees who are excluded based on classification do not satisfy one of the definitions of "excludable employee" in either regulation. Those employees are treated as non-excludable for determining the total number of employees.

				2012		
EE Category	Hire Date	Term Date	Hours	Entry date	Excludable	
1 Salaried	04-01-2010			07-01-2011	no	
2 Hourly	N/A	N/A	N/A	N/A	no	
3 Alien	N/A	N/A	N/A	N/A	YES	
4 Salaried	04-01-2011			07-01-2012	no	
5 Salaried	09-01-2011			01-01-2013	YES	
6 Salaried	04-01-2010	06-30-2012	1,000	07-01-2011	no	
7 Salaried	04-01-2010	06-30-2012	400	07-01-2011	YES	
8 Hourly	N/A	N/A	N/A	N/A	no	
9 Hourly	N/A	N/A	N/A	N/A	no	

The hours worked during 2012 do not affect the date that employees enter the plan. The reason is that eligibility service is based on the elapsed time method.

Employee 3 is excludable because they are a non-resident alien. Employee 5 is excludable because they don't enter the plan until 2013. The one that is tricky is employee 7.

(continued on next page)

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Problem 44 – Page 2

The 2012 hours are used to identify which of the employees who terminate satisfy the definition of an excludable employee. In the regulation at 1.410(b)-6(f)(1), it specifies that a terminating employee may be excludable if they satisfy six criteria:

1. Employee does not benefit under the plan for the year
2. Employee is eligible to participate
3. The plan has a minimum period of service, or a requirement of being employed on the last day to receive an allocation
4. Employee fails to receive an allocation due to failure to satisfy item 3
5. Employee terminates with no more than 500 hours, and is not an employee on last day of the plan year
6. If this paragraph is applied to any employee, it is applied to all employees for the year

Since employee 7 satisfies the criteria above, they are excludable. Three of the nine employees can be treated as excludable under 401(a)(26).

Answer is B