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Actuarial Study Materials

Solutions to the 2013 EA-2L Exam

by David B. Farber, A.S.A., E.A., M.S.P.A.

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ABOUT THIS MANUAL

The solutions in this manual represent the author's interpretation of the correct method of solving each of the questions from the 2013 EA-2L examination. The solutions follow the rules of ERISA and the Internal Revenue Code as of November, 30, 2012. Note that some of these rules may have changed for subsequent years.

The actual examination questions are available on ASM's web site at www.studymanuals.com.

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Question 1

I. The schedule SB states that the signature of the enrolled actuary certifies that all assumptions are reasonable both individually and in combination (other than those mandated by law). This is also a requirement in Joint Board regulation 901.20(e)(1)(i). The statement is true.
II. Any actuarial report certified by an enrolled actuary must include a statement or reference regarding any material inadequacies, including the implications of the inadequacies. That would include the AFTAP certification. See Joint Board regulation 901.20(e)(2). The statement is true.
III. An actuarial report can reference another document that provides information with regard to the assumptions, methods and data used for purposes of the report. That would include the AFTAP certification. See Joint Board regulation 901.20(e)(1)(iii). The statement is true.

Answer is D.

Question 2

The top heavy ratio as described in IRC section 416(g)(1) is equal to the ratio of the present value of accrued benefits for the key employees to the present value of accrued benefits for all employees. All plans of the employer that include at least one key employee must be aggregated for purposes of the top heavy ratio.

The determination date for the top heavy ratio is defined in IRC section 416(g)(4)(C) to be the last day of the preceding year. For the 2013 top heavy ratio, the determination date is 12/31/2012. The valuation date during the 12-month period ending on the determination date is used for the top heavy ratio. The valuation date in this question is 12/31, so the present values as of 12/31/2012 are used for the 2013 top heavy ratio.

Plan A has no key employees, so only Plans B and C are used for the top heavy ratio. (Note that had Plan A been permissively aggregated for coverage or nondiscrimination testing, then Plan A would also be required to be aggregated for the top heavy ratio. See Treasury Regulation 1.416-1, Q&A T-6.)

$$2013 \text{ top heavy ratio} = \frac{\$14,500,000 + \$17,000,000}{\$14,500,000 + \$17,000,000 + \$11,500,000 + \$11,500,000}$$
$$= 0.578, \text{ or } 57.8\%$$

Answer is E.

Question 3

ERISA section 4211 requires the use of an allocation fraction to allocate unfunded vested benefits to a withdrawing employer. That fraction is equal to the ratio of the plan contributions from the withdrawing employer during the past 5 years to the plan contributions from all employers during the past 5 years. Withdrawal liability payments are not part of the fraction. The statement is true.

Answer is A.

Question 4

Complete withdrawal liability is determined as of the last day of the plan year prior to the year of withdrawal. In this question, that would be 12/31/2011. Under the Rolling 5 Method, the total unfunded vested benefits (UVBs) as of the end of the year prior to withdrawal is multiplied by a fraction, the numerator consisting of the total contributions made by the withdrawing employer for the 5-year period ending on the last day of that prior year, and the denominator consisting of the total contributions made by all employers for the same 5-year period (there is an adjustment to this if there are any previously withdrawn employers). The result is the withdrawing employer's share of UVBs. If a de minimis credit applies, that result is reduced by the credit in order to obtain the complete withdrawal liability. The total withdrawal liability of $1,800,000 far exceeds the phase out of any de minimis credit under ERISA section 4209, so the allocation of the UVB is also the complete withdrawal liability.

Employer A contributions for 2007 – 2011:

$300,000 + $X + $200,000 + $250,000 + $200,000 = $950,000 + $X

All employer contributions for 2007 – 2011:

$3,000,000 + $2,500,000 + $3,300,000 + $3,000,000 + $4,000,000 = $15,800,000

The amount of unfunded vested benefits allocated to Employer A is:

$$\text{Unfunded vested benefits}_{12/31/2011} \times \frac{\text{Employer A Contributions for 2007 - 2011}}{\text{All Employer Contributions for 2007 - 2011}}$$

$$= \$25,000,000 \times \frac{\$950,000 + \$X}{\$15,800,000} = \$1,800,000$$

$X = $187,600

Answer is B.

Question 5

Final 5-year average salary is equal to the average of the annual salary paid from 2008 – 2012. Note that each salary is less than the IRC section 401(a)(17) salary limitation.

$$\text{Final 5-year average salary} = \frac{\$200,000 + \$185,000 + \$200,000 + \$200,000 + \$200,000}{5}$$
$$= \$197,000$$

Accrued benefit as of 12/31/2012 = 80% $\times$ \$197,000 = \$157,600

Under IRC section 415(b), the accrued benefit cannot exceed the smaller of the 415(b) dollar maximum or the 415(b) compensation maximum.

The dollar maximum for 2012 is equal to \$200,000, reduced by 10% for each year of plan participation less than 10 years. Smith entered the plan on 1/1/2006, so Smith has 7 years of plan participation.

415(b) dollar maximum = \$200,000 $\times$ 7/10 = \$140,000

The compensation maximum under 415(b) is equal to the high consecutive 3-year average salary, reduced by 10% for each year of service less than 10 years. Smith was hired on 1/1/2005, so Smith has 8 years of service with the employer. Smith's high consecutive 3 years of salary occurred in 2005 through 2007. This is clearly much higher than the 5-year average used to determine the plan accrued benefit, and 8/10 of that amount is clearly larger than the 415(b) dollar maximum of \$140,000. Therefore, Smith's accrued benefit is limited to \$140,000.

Answer is C.

Question 6

Unpredictable contingent event benefits may only be paid if the AFTAP is at least 60% (IRC section 436(b)). In 2012, the AFTAP is certified as 68%, so the unpredictable contingent event (UCE) benefits due to the 2012 plant shutdown can be paid. Treasury Regulation 1.436-1(b)(4) indicates that UCE benefits attributable to an unpredictable contingent event that occurred during a period where there is no restriction are not affected by any future restriction, and can continue to be paid.

As of 4/1/2013, the 2013 AFTAP has not been certified, so the presumed AFTAP is less than 60% (68% reduced by 10 percentage points). However, while UCE benefits could not be paid if a new unpredictable contingent event occurred on or after 4/1/2013, the 2012 UCE benefits are still paid. The statement is true.

Answer is A.

Question 7

In order to satisfy the minimum accrual requirements of IRC section 411(b), the accrued benefit definition of a defined benefit plan must satisfy one of the 3 minimum accrual requirements: the 133⅓% rule, the 3% rule, or the fractional rule.

The 133⅓% rule requires that no accrual can be more than 133⅓% of any prior year accrual (either as a dollar amount or percentage of salary). In the later years, the accrual is 5.25% of average compensation, and in the early years, the accrual is 3.75% of average compensation. This is an increase of 140% (5.25/3.75), which does not satisfy the 133⅓% rule.

The 3% rule is not satisfied if the benefit formula allows for service in excess of 33⅓ years. The benefit formula allows for unlimited service, so the 3% rule is not satisfied.

The fractional rule provides that the accrued benefit is a pro-rated amount of the total benefit at retirement. The accrual formula does not provide for pro-rata accrual (accrual is smaller in the early years and larger in the later years), so the fractional rule is not satisfied.

The benefit formula does not satisfy the accrual requirements of IRC section 411(b). The statement is false.

Answer is B.

Question 8

Liability payments for withdrawal from a multiemployer plan are generally limited to a maximum of 20 years (ERISA section 4219(c)(1)(B)). However, in the case of a mass withdrawal, ERISA regulation 4219.12(b) indicates that a withdrawing employer is liable for the payments otherwise limited to 20 years. The statement is false.

Answer is B.

Question 9

ERISA section 4219(c)(1)(C)(i)(I) states that the liability payment for a completely withdrawn employer from a multiemployer plan is determined based upon the average of the base units for the highest consecutive 3 years (not 5 years) out of the last 10 years prior to the year of withdrawal. The statement is false.

Answer is B.

Question 10

The excise tax due to reversion of assets to an employer upon plan termination is generally 50%. However, if at least 25% of the excess assets are transferred to a qualified replacement plan, then the remaining reversion to the employer is subject to an excise tax of only 20%. Plan B is not a qualified replacement plan because the plan does not cover at least 95% of the participants of the terminating Plan A (Plan A covers salaried employees, and Plan B covers hourly employees, so there are no common participants).

As a result, the reversion is subject to a 50% excise tax. The statement is false.

Answer is B.

Question 11

An enrolled actuary may not perform services for a client if the enrolled actuary believes that the client will use the valuation results in a fraudulent manner (see Joint Board regulation 901.20(b)(2)). Reporting the matter to a government agency does not allow the actuary to provide those services as long as the actuary believes that the client will use the services fraudulently. Only statement III is true.

Answer is C.

Question 12

IRC section 4975(e)(3)(A) states that a fiduciary is any person who exercises any authority or control over the disposition of plan assets. The selection of annuity contracts would constitute a fiduciary duty, so Smith would be a fiduciary of the plan. The statement is true.

Answer is A.

Question 13

The safe harbor rules for normal retirement age under Treasury regulation 1.401(a)-1(b)(2)(ii) state that normal retirement age is a safe harbor if it is age 62 or later. The normal retirement age in this question is 62, so it satisfies the safe harbor rules. It is irrelevant that there is an unreduced early retirement age, because the early retirement age is not covered by the normal retirement age restrictions. The statement is true.

Answer is A.

Question 14

The premium in this question is paid after the date that the PBGC issued the written notification of the premium deficiency. ERISA regulation 4007.8(1)(ii) provides that the penalty is equal to 5% of the unpaid premium for each month (or fraction of a month) that the payment is late. The payment is 4 months and 13 days late, so the penalty is based on the payment being late by 5 months.

Penalty = 5% × 5 months × $25,000 = $6,250

Answer is E.

Question 15

.A plan is top heavy if the top heavy ratio is greater than 60% (IRC section 416(g)(1)). In that case of an employer that sponsors more than one plan, all plans with at least one key employee must be aggregated for purposes of the top heavy ratio (IRC section 416(g)(2)(A)(i)). The aggregated top heavy ratio exceeds 60% for the years 2002 – 2005 and 2010 – 2012.

The top heavy minimum under IRC section 416(c)(1) is equal to 2% of the high consecutive 5-year average salary for years of service with the employer other than years in which the plan was not top heavy. Note that Treasury regulation 1.416-1, Q&A M4 indicates that only years of service while actually participating in the plan are used for purposes of the top heavy minimum benefit.

The minimum graded vesting schedule under IRC section 416(b) is the 2 to 6 year vesting schedule.

Smith
Smith has 8 years of service as of 12/31/2012, and is fully vested under the vesting schedule. Plan A became effective on 1/1/2006, and was top heavy for the years 2010 – 2012 (3 years).

Plan accrued benefit for Smith = 1.5% × $50,000 × 8 years of service = $6,000
Top heavy minimum for Smith = 2% × $50,000 × 3 years of top heavy service = $3,000

The accrued benefit for Smith is equal to the greater of the plan benefit and the top heavy minimum. This is $6,000, and is fully vested.

Jones
Jones has 5 years of service as of 12/31/2012, and is 80% vested under the vesting schedule. Plan B became effective on 1/1/2002, and was top heavy for the years 2002 – 2005 and 2010 – 2012 (7 years). However, Jones was not hired until 1/1/2008, so Jones only has 3 years of top heavy service while a plan participant.

Plan accrued benefit for Jones = $250 × 5 years of service = $1,250
Top heavy minimum for Jones = 2% × $50,000 × 3 years of top heavy service = $3,000

The accrued benefit for Jones is equal to the greater of the plan benefit and the top heavy minimum. This is $3,000. Jones is 80% vested, so the vested accrued benefit is $2,400 (80% × $3,000).

Total annual vested accrued benefit for Smith and Jones = $6,000 + $2,400 = $8,400

Answer is B.

Question 16

The variable-rate premium is equal to 0.9% of the unfunded vested benefits. The vested benefit value using the standard premium method is based upon the standard premium funding target. The assets taken into account are the market value of assets. The excess of the liabilities over the assets are rounded up to the next multiple of $1,000 before multiplying by 0.9%.

2013 variable premium unfunded liabilities = $240,000 − $180,000 = $60,000

2013 variable-rate premium = $60,000 × 0.009 = $540

Beginning in 2013, there is a variable premium cap of $400 per plan participant. This cap clearly does not apply because there are 10 participants, resulting in a cap that far exceeds $540.

For small employers (no more than 25 <u>employees</u>), there is also a cap on the variable premium equal to the number of <u>participants</u> squared, multiplied by $5. For 2013, there are 12 employees (and 10 participants), so the cap must be considered.

Variable premium cap = $5 × 10^2 = $500

The variable premium is equal to the small employer cap of $500. The statement is false.

Answer is B.

Question 17

A majority owner may elect to forgo receipt of benefits if necessary to allow a plan to terminate as a standard termination (ERISA regulation 4041.21(b)(2)). Smith is not a majority owner, so the statement is false.

Answer is B.

Question 18

Treasury regulation 1.436-1(f)(2)(iv)(A) states that for a plan in which the certified adjusted funding target attainment percentage (AFTAP) is less than 80%, an IRC section 436 contribution may be made in order to allow a plan amendment increasing liabilities to take effect. Regulation 1.436-1(f)(2)(i)(A)(2) states that if the IRC section 436 contribution is made on a date other than the valuation date for the year, then the contribution must be interest adjusted from the valuation date to the date of the contribution using the plan effective rate for that plan year. This question is asking for the additional contribution that could be made on 9/30/2013 that would allow the amendment increasing the funding target by $175,000 to take effect.

The amount of the IRC section 436 contribution is dependent on the AFTAP. The AFTAP, as defined in IRC section 436(j)(1) and determined on the plan valuation date, is equal to the ratio of the actuarial value of assets (reduced by the funding balances) to the funding target, with both the numerator and denominator increased by the total purchases of annuities for the NHCEs during the last 2 years.

$$2013 \text{ AFTAP} = \frac{1,750,000 + 90,000}{2,175,000 + 90,000} = 81.24\%$$

Although the AFTAP is not less than 80%, the restriction allowing the amendment to take effect also applies if the AFTAP, determined by including the increase in the funding target attributable to the amendment, is less than 80% (IRC section 436(c)(1)(B)). We can refer to this as the "adjusted" AFTAP.

$$\text{"Adjusted" 2013 AFTAP} = \frac{1,750,000 + 90,000}{2,175,000 + 175,000 + 90,000} = 75.41\%$$

When the "adjusted" AFTAP is less than 80%, Treasury regulation 1.436-1(f)(2)(iv)(B) states that the 436 contribution is the amount that would allow the "adjusted" AFTAP to be exactly 80% if that 436 contribution was included in the numerator.

$$\text{"Adjusted" 2013 AFTAP} = \frac{1,750,000 + X + 90,000}{2,175,000 + 175,000 + 90,000} = 80\%$$

Solving for X, X = $112,000

However, the contribution is not made until 9/30/2013, so the $112,000 must be increased at the 5.2% plan effective rate (for 2013) for 9 months.

IRC section 436 contribution = $112,000 \times 1.052^{9/12} = $116,340$

Answer is C.

Question 19

ERISA section 4010(b)(1) generally requires a filing to be made if the funding target attainment percentage is less than 80%. The funding target attainment percentage (FTAP) under IRC section 430(d) is equal to the ratio of the actuarial value of the assets (reduced by the funding balances) to the funding target.

FTAP = $39,000,000/$50,000,000 = 78%

However, the exception to this rule is that there is no filing required if the funding shortfall (funding target less actuarial value of assets) is no more than $15,000,000. The funding shortfall for this plan is only $9,000,000, so there is no ERISA section 4010 filing required due to the FTAP being under 80%.

ERISA section 4010(b)(2) requires a filing to be made if there is a funding deficiency (or late quarterly contribution) of more than 10 days in an amount exceeding $1,000,000. The quarterly contributions required under IRC section 430(j)(3)(C) were due on 4/15/2013 and 7/15/2013 in the amount of $700,000 each. The only contribution for 2013 was made on 9/15/2013 (in the amount of $4,000,000), so the first two quarterly contributions, totaling $1,400,000 were late. An ERISA section 4010 filing is required due to the two late quarterly contributions.

Both the assertion and the reason are true statements, but the reason is not a correct explanation for the assertion.

Answer is B.

Question 20

IRC section 417(a)(1) requires a defined benefit plan to offer a qualified joint and survivor annuity (QJSA) option to married participants, with a minimum survivor annuity for the spouse of 50% and maximum of 100% of the benefit that would be payable over the joint lives of the participant and the spouse. The QSJA in this question is the 50% J&S benefit.

IRC section 417(c)(1)(A) states that the qualified preretirement survivor annuity (QPSA) percentage cannot be less than the qualified joint and survivor annuity percentage. Therefore, the smallest QPSA percentage that must be provided in this plan is equal to the QJSA percentage of 50%.

The preretirement death benefit payable to a spouse as a QPSA upon the death of the participant is payable at the earliest possible retirement age had the participant not died (IRC section 417(c)(1)(A)(ii)). The benefit payable to the spouse is the spousal benefit that would have been paid if the participant had elected to retire on that earliest retirement age and then died.

Note that no QPSA benefit is required to be paid if the participant and spouse have been married for less than one year as of the date of death (IRC section 417(d)). The question states that the participant and spouse had been married for over one year at the time of death.

Smith has died at age 60 and had 10 years of service, so the earliest retirement age at which Smith could have retired had he not died is immediately, at the early retirement age of 60 (for which Smith qualifies).

The vested accrued benefit of $800 (payable at age 65) must be adjusted to a benefit payable at age 60 (reduced by 5% per year prior to age 65) and further adjusted to a 50% J&S benefit (multiplied by the given adjustment factor of .92).

50% QJSA benefit = $800 × [1 − (.05 × 5)] × .92 = $552

50% of this amount is the QPSA benefit payable to Smith's spouse.

QPSA benefit = 50% × $552 = $276

Answer is B.

Question 21

IRC section 4975(c)(1)(A) states that a prohibited transaction occurs if there is a sale or exchange, or leasing, of any property between a plan and a disqualified person. IRC section 4975(e)(2)(E) describes an owner of 50% or more of an employer as being a disqualified person. A majority owner is defined under ERISA to be anyone owning 50% or more of an employer.

In this question, a majority owner (who is a disqualified person) is renting an apartment owned by the plan. That is a prohibited transaction. The statement is true.

Answer is A.

Question 22

A measurement period of the current plan year used to determine normal and most valuable accrual rates requires the use of the current year accrual for the defined benefit plan. In this question, the defined benefit plan and the profit sharing plan are aggregated, so the current year profit sharing plan contribution is also used. The 401(k) deferral must be disaggregated, so it is not considered. (Treasury Regulation 1.401(a)(4)-9(a) requires that the permissive aggregation rules of IRC section 410(b) must be followed, and regulation 1.410(b)-7(c)(1) requires disaggregation of 401(k) plans.)

Testing age for nondiscrimination purposes is generally normal retirement age. The general conditions of the exam state that normal retirement age is 65, unless otherwise noted in a question, so testing age for this question is age 65.

Nondiscrimination is being tested on a benefits basis, so the profit sharing contribution must be accumulated to testing age 65 using the testing assumptions (8.5% interest rate) and normalized to a life annuity. Smith is currently age 60, so there is a 5-year accumulation of the profit sharing contribution.

Normalized benefit equivalent to profit sharing contribution:

$$\$4,000 \times 1.085^5 \div \ddot{a}_{65}^{(12)} = \$4,000 \times 1.085^5 \div 8.38 = \$717.74$$

The most valuable benefit is deemed to be the qualified joint and survivor annuity (Treasury regulation 1.401(a)(4)-3(d)(1)(ii)). The qualified joint and survivor annuity (QJSA) must then be normalized using testing assumptions to a life annuity.

Early retirement benefits can be paid at age 62 or later. Each possible early retirement benefit must be considered, and normalized (using the 8.5% testing interest rate) to a life annuity at age 65 in order to determine the most valuable accrual from the defined benefit plan. At each age, the $5,000 annual accrual is adjusted by a factor of .90 to convert it to a QJSA benefit, and by the appropriate reduction for the early retirement age.

At age 62, the benefit payable as a QJSA is $3,960 ($5,000 × .90 × .88).
At age 63, the benefit payable as a QJSA is $4,230 ($5,000 × .90 × .94).
At age 64, the benefit payable as a QJSA is $4,410 ($5,000 × .90 × .98).
At age 65, the benefit payable as a QJSA is $4,500 ($5,000 × .90).

Each of these benefits must be normalized by multiplying by the QJSA annuity value at the actual retirement age, accumulating the result to age 65 at 8.5% interest, and dividing by the life annuity factor at age 65. The benefit at the actual retirement age multiplied by the normalization factor is equal to the normalized benefit.

RA	Benefit	Normalization factor	Normalized benefit
62	$3,960	$10.60 \times 1.085^3 \div 8.38 = 1.615664$	$6,398.02
63	$4,230	$10.48 \times 1.085^2 \div 8.38 = 1.472234$	$6,227.55
64	$4,410	$10.35 \times 1.085 \div 8.38 = 1.340066$	$5,909.69
65	$4,500	$10.22 \div 8.38 = 1.219570$	$5,488.07

The largest normalized benefit is $6,398.02, so that is the most valuable accrual from the defined benefit plan.

The aggregate most valuable accrual rate is equal to the ratio of the sum of the defined benefit plan most valuable accrual and the profit sharing plan equivalent benefit to the testing compensation.

$$\text{Aggregate most valuable accrual} = \frac{\$6,398.02 + \$717.74}{\$50,000} = 0.1423, \text{ or } 14.23\%$$

Answer is D.

Question 23

This plan provides that a participant retiring after normal retirement age receives the greater of the accrued benefit with continued accrual after normal retirement age or the actuarial equivalent of the normal retirement benefit. Although suspension of benefits notices are provided at normal retirement age, the plan must still pay what it promised upon actual retirement. (Note that the plan was not required to have a provision to allow for payment of the actuarially increased benefit, but in this question it does allow for payment of the actuarial increase.)

Smith reached normal retirement age 62 on 1/1/2012, and had 21 years of service at that time. The benefit formula provides for a maximum 20 years of service, but Smith's benefit can still increase if final compensation increases.

Accrued benefit at age 65: $2\% \times \$44,000 \times 20$ years of service = $17,600
Accrued benefit at age 66: $2\% \times \$47,000 \times 20$ years of service = $18,800

Actuarial equivalent of the age 65 benefit, payable at age 66:

$$\$17,600 \times \ddot{a}_{65}^{(12)} \times \frac{D_{65}}{D_{66}} \div \ddot{a}_{66}^{(12)} = \$17,600 \times 10.87 \times 1.07 \div 10.61 = \$19,293$$

The greater of the accrued benefit at age 66 or the actuarial equivalent of the age 65 benefit, payable at age 66 is $19,293

Answer is D.

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Question 24

The mandatory de minimis rule under ERISA section 4209(a) states that the allocation to a withdrawing employer of the plan's unfunded vested benefit obligations are generally reduced by the smaller of:

(1) ¾% of the total unfunded vested benefits for the entire plan, or
(2) $50,000

¾% of the total unfunded vested benefits = ¾% × $5,000,000 = $37,500

The smaller of $37,500 and $50,000 is $37,500.

The de minimis credit is reduced by one dollar for every dollar that the withdrawing employer's share of unfunded vested benefit obligations exceeds $100,000. The reduction in the de minimis credit for Company A is:

$115,000 - $100,000 = $15,000

The de minimis credit for Company A is:

$37,500 - $15,000 = $22,500

Complete withdrawal liability for Company A = $115,000 - $22,500 = $92,500

Answer is D.

Question 25

The AFTAP, as defined in IRC section 436(j)(1) and determined on the plan valuation date, is equal to the ratio of the actuarial value of assets (reduced by the funding balances) to the funding target, with both the numerator and denominator increased by the total purchases of annuities for the NHCEs during the last 2 years. It can be assumed, based upon the general conditions of the exam, that there were no purchases of annuities in the past 2 years.

$$2012 \text{ AFTAP} = \frac{735,000 - 50,000}{800,000} = 85.625\%$$

There are no restrictions on accelerated distributions for 2012 because the AFTAP is at least 80%.

For 2013, the presumed AFTAP from 1/1/2013 through 3/31/2013 is 85.625%, and there are no restrictions on payment of accelerated distributions. As of 4/1/2013, the presumed AFTAP decreases by 10 percentage points, to 75.625%, making the plan subject to partial restrictions of accelerated distributions under IRC section 436(d)(3).

Treasury regulation 1.436-1(a)(5) requires the reduction of the funding balances to the extent the reduction would allow the plan to avoid the restrictions on accelerated distributions. In the case where a presumed AFTAP applies, regulation 1.436-1(g)(2) provides rules to allow for this reduction in the funding balances. A presumed funding target must be determined as of 4/1/2013 (the first date that accelerated distribution restrictions may apply), using the actuarial value of assets and funding balances in effect as of the first day of the plan year, and the prior year AFTAP.

$$\frac{730,000 - 50,000}{\text{Presumed Funding Target}} = 75.625\%$$

Presumed Funding Target = $899,174

The funding standard carryover balance must be reduced to an amount that would allow the presumed AFTAP to be exactly 80%.

$$\frac{730,000 - X}{899,174} = 80\% \qquad \rightarrow \qquad X = \$10,661$$

The funding standard carryover balance must be reduced to $10,661, so the reduction is $39,339 ($50,000 - $10,661).

Answer is D.

Question 26

IRC section 1563(a)(1) defines a parent subsidiary controlled group as existing if there is at least 80% common control of two employers. Companies A and B are not a parent subsidiary controlled group because Smith has only 53% common ownership.

IRC section 414(b) states that for employers that are part of the same controlled group, IRC section 415 must be applied as if the controlled group is a single employer. IRC section 415(h) states that for purposes of applying section 414(b) to IRC section 415, 50% is substituted under IRC section 1563(a)(1) for 80%. Therefore, for purposes of IRC section 415, Companies A and B must be treated as a single employer.

The benefits from the plans of both Companies A and B must be taken into account in aggregate in order to determine whether the requirements of IRC section 415 are satisfied. The statement is false.

Answer is B.

Question 27

The variable-rate premium is equal to 0.9% of the unfunded vested benefits. The vested benefit value using the alternative premium method is based upon the alternative premium funding target. The assets taken into account are the market value of assets. The assets must include contributions receivable for the prior year that have been made as of the date of the premium filing, discounted to the first day of the current year using the prior year's plan effective rate. There are two receivable contributions for 2012, both deposited by 9/15/2013. Although the question does not state the premium filing date, it can be assumed that this date is the due date of 10/15/2013. Both receivable contributions must be discounted with interest at 5.75% (the 2012 plan effective rate) to 1/1/2013.

$$\$900,000 \div 1.0575^{0.5/12} = \$897,906$$
$$\$1,000,000 \div 1.0575^{8.5/12} = \$961,173$$

Adjusted market value of assets = $\$44,000,000 + \$897,906 + \$961,173 = \$45,859,079$

The excess of the liabilities over the assets are rounded up to the next multiple of $1,000 before multiplying by 0.9%.

2013 variable premium unfunded liabilities = $\$54,500,000 - \$45,859,079 = \$8,640,921$

2013 variable-rate premium = $\$8,641,000 \times 0.009 = \$77,769$

Beginning in 2013, there is a variable premium cap of $400 per plan participant. This cap clearly does not apply because there are 1,000 participants, resulting in a cap of $400,000 (1,000 × $400).

For small employers (no more than 25 employees), there is a cap on the variable premium equal to the number of participants squared, multiplied by $5. For 2013 there are 1,000 participants, and the number of employees is not given, so it can be assumed that the number of employees and participants are the same. The small employer cap is ignored.

The variable rate premium for 2013 is $77,769.

Answer is D.

Question 28

This question requires allocation of assets through the PBGC priority categories, under ERISA section 4044. The question is asking for the present value of the guaranteed benefits not provided by plan assets for Jones. This requires an allocation of assets through the PBGC priority categories.

PBGC priority categories 1 and 2 relate to voluntary and mandatory employee contributions, respectively. There are no employee contributions mentioned in this question, and as a result no category 1 or 2 benefits.

PBGC priority category 3 relates to benefits that could have been paid 3 years prior to the plan termination date, for participants who could have retired at that time. Smith is age 60 with 30 years of service as of the plan termination date, and was age 57 with 27 years of service 3 years prior to the plan termination date. Smith could have retired 3 years before the plan termination date (under the plan's early retirement provisions), and has category 3 benefits. Jones is age 45 with 20 years of service as of the plan termination date, and was age 42 with 17 years of service 3 years prior to the plan termination date. Jones could not have retired 3 years before the plan termination date and does not have any category 3 benefits.

The category 3 benefit for Smith uses salary history and service through 1/1/2010 (the date that Smith could have retired 3 years before the plan termination date), and any early retirement reduction that would have applied on 1/1/2010. The benefit formula used is the formula in effect at any time during the 5-year period prior to the plan termination date that would produce the smallest benefit. That is the 1% formula.

Smith category 3 monthly benefit = $1\% \times (\$100{,}000/12) \times 27 \text{ years} \times [1 - (.05)(8)]$
$$= \$1{,}350$$

The present value of the category 3 benefit is determined as of the plan termination date in order to determine whether there are enough assets to pay for the benefit. The benefits are valued at the plan termination date.

Present value of category 3 benefit = $\$1{,}350 \times 12 \times \ddot{a}_{60}^{(12)} = \$16{,}200 \times 16.09 = \$260{,}658$

There are enough assets to pay for the category 3 benefits.

Assets remaining for category 4 = $450,000 - $260,658 = $189,342

PBGC priority category 4 relates to guaranteed benefits. It is not stated whether Smith or Jones are majority owners, so it should be assumed that they are not. The vested accrued benefit attributable to the benefit structure in place exactly 5 years before the plan termination date is fully guaranteed (up to the PBGC maximum guaranteeable benefit). That benefit structure is 1% of final average salary per year of service. It is given that the PBGC expected retirement age (XRA) is age 60 for Smith and age 58 for Jones, so the vested accrued benefit should be determined as if it will be payable at those ages. The vesting schedule is not provided, but both Smith and Jones have at least 7 years of service, and must therefore be fully vested under any vesting schedule that would satisfy the minimum vesting rules of IRC section 411(a).

The monthly accrued benefit, payable at XRA (with an early retirement reduction factor reflecting the 5% per year reduction prior to age 65), for each participant using the 1% benefit formula is:

Smith: $1\% \times \$100,000 \div 12 \times 30$ years of service $\times 0.75 = \$1,875$
Jones: $1\% \times \$80,000 \div 12 \times 20$ years of service $\times 0.65 = \$866.67$

The maximum guaranteeable monthly benefit for 2013 is $4,789.77. This is payable at age 65 as a life annuity. Since the accrued benefit for Smith and Jones is assumed payable at ages 60 and 58, respectively, the maximum benefit is reduced using the PBGC adjustment factors for retirement prior to age 65 (these factors are provided with the exam).

PBGC maximum benefit, payable at age 60 $= \$4,789.77 \times 0.65 = \$3,113.35$
PBGC maximum benefit, payable at age 58 $= \$4,789.77 \times 0.57 = \$2,730.17$

The vested accrued benefit under the 1% benefit formula is not limited for either participant.

The vested accrued benefit increase under the 10/1/2010 plan amendment is phased in under the rules of ERISA section 4022 at the rate of 20% for each full 12-month period that the amendment was in effect through the plan termination date. The amendment was effective for 2 years and 2 months, so it is phased in for 2 complete 12-month periods.

The monthly accrued benefit, payable at XRA (with an early retirement reduction factor reflecting the 5% per year reduction prior to age 65), for each participant using the 2% benefit formula is:

Smith: $2\% \times \$100,000 \div 12 \times 30$ years of service $\times 0.75 = \$3,750$
Jones: $2\% \times \$80,000 \div 12 \times 20$ years of service $\times 0.65 = \$1,733.33$

The benefit for Smith under the 2% formula must be limited to the PBGC maximum for Smith of $3,113.35. The benefit for Jones is well below the PBGC maximum.

The benefit increase and phase-in for each participant under the 10/1/2010 plan is:

Smith: $3,113.35 - $1,875.00 = $1,238.35
Jones: $1,733.33 - $866.67 = $866.66

Phased in benefit increase for Smith = $1,238.35 $\times$ 20% $\times$ 2 years = $495.34
Phased in benefit increase for Jones = $866.66 $\times$ 20% $\times$ 2 years = $346.66

Total guaranteed benefit for Smith = $1,875.00 + $495.34 = $2,370.34
Total guaranteed benefit for Jones = $866.67 + $346.66 = $1,213.33

The category 4 benefit for Smith is equal to the guaranteed benefit reduced by the benefit already considered in category 3.

Category 4 benefit for Smith = $2,370.34 - $1,350.00 = $1,020.34

PV of Category 4 benefit for Smith = $1,020.34 $\times$ 12 $\times$ $\ddot{a}_{60}^{(12)}$ = $197,007

PV of Category 4 benefit for Jones = $1,213.33 $\times$ 12 $\times$ $_{13|}\ddot{a}_{45}^{(12)}$ = $159,140

Total PV in Category 4 = $197,007 + $159,140 = $356,147

The $189,342 remaining assets available for category 4 are not enough to pay for all of the category 4 benefits. The remaining assets are allocated proportionately to Smith and Jones. The allocation to Jones is:

$$189,342 \times \frac{\$159,140}{\$356,147} = \$84,605$$

The portion of Jones guaranteed benefit not provided by plan assets is:

$159,140 - $84,605 = $74,535

Answer is A.

Question 29

For purposes of the average benefit percentage under IRC section 410(b), all plans of the employer, including 401(k) plans, are generally aggregated (see Treasury regulation 1.410(b)-7(e)(1)). For this purpose, the normal accrual rates are generally used (see Treasury regulation 1.410(b)-5(d)(5)(i)). Since the average benefit percentage is being determined using accrual rates on a benefits basis, the 401(k) deferral and profit sharing contribution must be accumulated to testing age using the testing interest rate of 8% and converted to a life annuity using the testing annuity rate. This will result in an equivalent benefit for the participants.

Testing age is generally normal retirement age. Normal retirement age for the profit sharing plan is age 62, but is not given for the defined benefit plan. The general conditions of the exam state that if normal retirement age is not given, then it is age 65. As a result, normal retirement age in the defined benefit plan is age 65. Treasury regulation 1.401(a)(4)-12 provides a definition of testing age. This definition states that if there is no uniform normal retirement age, then testing age is 65. There is no uniform normal retirement age since the two plans have different normal retirement ages, so testing age is 65.

The given annuities are annual annuities, and the general conditions of the exam state that benefits are payable monthly. So, the monthly annuity values must be developed, using standard approximations. Recall that:

$$\ddot{a}_x^{(12)} = \ddot{a}_x - 11/24$$

$$\ddot{a}_{65}^{(12)} = \ddot{a}_{65} - 11/24 = 9.35 - 11/24 = 8.8917$$

Equivalent benefit for each participant:

NHCE1: $(2{,}500 + 4{,}500) \times 1.08^{30} \div 8.8917 = 7{,}922$
NHCE2: $(2{,}000 + 4{,}400) \times 1.08^{35} \div 8.8917 = 10{,}642$
HCE: $(X + 9{,}000) \times 1.08^{10} \div 8.8917 = 0.2428X + 2{,}185$

The normal accrual rate for each participant is equal to the sum of the equivalent benefit and the defined benefit plan accrual, divided by testing compensation.

NHCE1: $(7{,}922 + 7{,}500)/75{,}000 = 20.56\%$
NHCE2: $(10{,}642 + 2{,}700)/55{,}000 = 24.26\%$
HCE: $(0.2428X + 2{,}185 + 28{,}200)/125{,}000$

The average benefit percentage (ABP) is equal to the average of the normal accrual rates for the NHCEs divided by the average of the normal accrual rates for the HCEs (see Treasury regulation 1.410(b)-5(b)). In order for the plan to pass the average benefit percentage test, the average benefit percentage must be equal to at least 70%.

Average accrual rates for NHCEs = (20.56% + 24.26%)/2 = 22.41%

Maximum accrual rate for sole HCE = 22.41% ÷ 0.7 = 32.01%

Considering the accrual rate for the HCE,

(0.2428X + 2,185 + 28,200)/125,000 = 32.01%

X = $39,652

Answer is E.

Note that the official answer key originally gave credit only for answer choice D. That answer is obtained if the annual annuity is used rather than the monthly annuity. The Joint Board ultimately accepted both answer choices. Choice E is truly the correct answer.

Question 30

The top heavy ratio as described in IRC section 416(g)(1) is equal to the ratio of the present value of accrued benefits for the key employees to the present value of accrued benefits for all employees. The plan is top heavy if the top heavy ratio exceeds 60%.

$$2013 \text{ top heavy ratio} = \frac{\$2,800,000}{\$2,800,000 + \$1,600,000} = 0.636, \text{ or } 63.6\%$$

The plan is top heavy for 2013.

Answer is A.

Question 31

A prohibited transaction under IRC section 4975(c)(B) occurs if there is any lending of money between a plan and a disqualified person. IRC section 4975(e)(2)(E) describes a 50% or more owner as a disqualified person.

However, in this situation, the plan has a policy of allowing adequately secured loans with a reasonable rate of interest of up to $10,000 to any plan participant. IRC section 4975(d)(1) allows for an exemption of the prohibited transaction rules in this situation, since Smith is taking a loan of only $8,000, which is not more than would be available to any other participant.

Smith's loan is not a prohibited transaction.

Answer is B.

Question 32

The top heavy minimum under IRC section 416(c)(1) is equal to 2% of the high consecutive 5-year average salary for years of service with the employer other than years in which the plan was not top heavy. Smith has 10 years of service with the employer, and 8 years of participation in the top heavy plan. Smith's highest 5 consecutive years of compensation is from 2005 through 2009.

Plan benefit formula accrued benefit = 1.5% × $41,000 × 10 years of service = $6,150

Top heavy minimum accrued benefit =

$$2\% \times \frac{\$42,000 + \$42,000 + \$42,000 + \$45,000 + \$41,000}{5} \times 8 \text{ years} = \$6,784$$

The overall accrued benefit is the greater of the two benefits, $6,784.

Answer is C.

Question 33

When a suspension of benefits notice is provided to a participant who continues to work past normal retirement age, the participant is not <u>required</u> to receive the actuarial increases in the benefit that they earned as of normal retirement age, although they may earn additional accruals under the plan benefit formula. Therefore, the benefit that Smith receives four years after normal retirement age could be less than the actuarial equivalent of the normal retirement benefit. The statement is false.

Answer is B.

Question 34

The flat premium for 2013 is equal to $42 per plan participant (with the participant count as of the close of the prior year – 12/31/2012). The participant count includes <u>all</u> active participants, as well as retirees and beneficiaries of the plan. Employees not yet plan participants are not counted. There are 11 participants (7 + 2 + 2) for the 2013 premium year.

2013 flat premium = $42 × 11 = $462

The variable-rate premium is equal to 0.9% of the unfunded <u>vested</u> benefits. The vested benefit value using the standard premium method is based upon the standard premium funding target. The assets taken into account are the market value of assets.

The excess of the liabilities over the assets are rounded up to the next multiple of $1,000 before multiplying by 0.9%.

2013 variable premium unfunded liabilities = $355,000 – $285,000 = $70,000

2013 variable-rate premium = $70,000 × 0.009 = $630

Beginning in 2013, there is a variable premium cap of $400 per plan participant. This cap clearly does not apply because there are 11 participants, resulting in a cap of $4,400 (11 × $400).

For small employers (no more than 25 <u>employees</u>), there is a cap on the variable premium equal to the number of <u>participants</u> squared, multiplied by $5. For 2013, there are 15 employees (the 11 plan participants plus the additional 4 employees). The small employer cap must be considered.

Small employer cap = $5 × 11^2 = $605

The variable rate premium is limited by the small employer cap.

Total premium for 2013 = $462 + $605 = $1,067

Answer is D.

Question 35

IRC section 415(b)(2)(B) requires adjustment of the IRC section 415(b) dollar limit ($205,000 in 2013) if the form of benefit elected is other than a life annuity or qualified joint and survivor annuity. IRC section 417(b) defines a qualified joint and survivor annuity as being an annuity with a spouse beneficiary.

The beneficiary of Smith is a sister, not a spouse, so the $205,000 dollar maximum must be reduced. The statement is false.

Answer is B.

Question 36

IRC section 415(b)(2)(E)(ii) requires that benefits payable in the form of a benefit subject to IRC section 417(e), such as a lump sum, is limited under IRC section 415(b) to a lump sum determined using the smallest of the annuity determined using plan provisions, 105% of the annuity using IRC section 417(e) assumptions, or the annuity using 5,5% interest and the applicable mortality table. In this question, the smallest annuity of the three is the annuity using plan equivalence, with a value of 11.55.

Annual annuity = $2,288,700 ÷ 11.55 = $198,156

Answer is D.

Question 37

The excise tax upon reversion of assets to the employer after a plan termination under IRC section 4980 is equal to 50% of the amount of the reversion, unless the plan satisfies either of the requirements under IRC sections 4980(d)(2) or 4980(d)(3). Those requirements are:

(1) Transfer at least 25% of the assets eligible for reversion to a Qualified Replacement Plan, or
(2) Increase benefits to the participants in an amount equal to at least 20% of the assets eligible for reversion.

If either requirement is satisfied, then the excise tax is reduced to 20% of the amount of the reversion.

The Qualified Replacement Plan option can also be satisfied by amending the plan to increase benefits to participants in addition to a transfer of assets to the qualified replacement plan, such that the sum of the increase of benefits from the amendment and the transfer to the qualified replacement plan is at least 25% of the assets eligible for reversion.

In this question, the amount of assets available for reversion before the plan amendment is taken into account is:

$3,985,000 – 3,330,000 = $655,000

25% of assets available for reversion = 25% × $655,000 = $163,750

The plan amendment increases benefits by $67,000, and $103,000 is transferred to a qualified replacement plan. This totals $170,000, which exceeds the required 25% requirement. Therefore, the employer is eligible for the 20% excise tax rate on the amount that actually reverts to the employer.

Excise tax = ($655,000 – 170,000) × 20% = $97,000

Answer is A.

Question 38

IRC section 436(c)(1) requires the AFTAP to be at least 80% in order for a plan amendment increasing liabilities to take effect. A contribution increasing the AFTAP to 60% would be insufficient for that purpose. The statement is false.

Answer is B.

Question 39

IRC section 415(b)(1)(A) provides that a dollar maximum ($205,000 in 2013) is the largest benefit that can be paid to a plan participant retiring at age 65 (as is the case for Smith). This benefit is reduced under IRC section 415(b)(2)(B) if the form of benefit is anything other than a life annuity or a qualified joint and survivor annuity. There is no reduction due to the form of benefit because Smith has elected to receive a qualified joint and survivor annuity.

IRC section 415(b)(5)(A) requires a reduction in the dollar maximum if the participant has fewer than 10 years of plan participation. Smith entered the plan on 1/1/2005, and has only 8 years of plan participation. The benefit for Smith must be reduced to:

$205,000 \times (8/10) = $164,000$

The statement is false.

Answer is B.

Question 40

ERISA section 204(h)(1) provides that a plan may not be amended to significantly reduce future benefit accruals (such as freezing the plan) unless notice is provided to affected applicable individuals. ERISA section 204(h)(8)(A) defines an applicable individual as a plan participant or a beneficiary who is an alternate payee under the terms of a Qualified Domestic Relations Order (QDRO), whose rate of accrual is reasonably expected to be significantly reduced by the plan amendment.

IRC section 4980F provides rules regarding the imposition of an excise tax on the employer for failure to provide the notice in a timely manner. In particular, IRC section 4980F(b)(1) provides an excise tax of $100 per day per affected applicable individual.

IRC section 4980F(c)(2) states that there is no excise tax due if the failure to provide a notice is corrected within 30 days. That is not the case in this question, because the notice is provided 55 days late.

The affected applicable individuals are the 50 active plan participants affected by the amendment.

Excise tax = 100×50 applicable individuals $\times$ 55 days = $275,000

Answer is B.

Question 41

The vested accrued benefit attributable to the benefit structure in place exactly 5 years before the plan termination date is fully guaranteed (up to the PBGC maximum guaranteeable benefit). That benefit structure is $45 per month per year of service. Smith has elected to retire on the plan termination date at age 55, so the vested accrued benefit should be determined as if it will be payable at that age. The vesting schedule is not provided, but Smith has at least 7 years of service (actually 25 years of service), and must therefore be fully vested under any vesting schedule that would satisfy the minimum vesting rules of IRC section 411(a).

The monthly accrued benefit, payable at 55 (with an early retirement reduction factor reflecting the 3% per year reduction prior to age 62), for Smith using the $45 benefit formula is:

$45 × 25 years of service × [1 − (.03 × 7 years)] = $888.75

The normal form of benefit is not stated in this question; however, without annuity factors to convert benefits from one form to another, it must be assumed that the normal form is a life with 10 year certain benefit.

The maximum guaranteeable monthly benefit under ERISA section 4022(b)(3) is equal to the smaller of the high consecutive 5-year average salary for a participant or the PBGC dollar maximum ($4,789.77 in 2013). This is payable at age 65 as a life annuity. Since Smith has retired on the plan termination date at age 55 and has elected a life annuity with 10 years certain, the maximum benefit is reduced using the PBGC adjustment factors.

The monthly high consecutive 5-year average salary for Smith is:

$40,000 ÷ 12 = $3,333.33

The smaller of the PBGC dollar maximum or the high 5-year average salary is the average salary of $3,333.33.

PBGC maximum benefit, payable at age 55 = $3,333.33 × 0.45 × 0.925 = $1,387.50

The vested accrued benefit under the $45 formula is not limited for Smith, and the $888.75 is fully guaranteed.

The vested accrued benefit increase under the 7/1/2009 plan amendment is phased in under the rules of ERISA section 4022 at the rate of 20% for each full 12-month period that the amendment was in effect through the plan termination date (the later of amendment effective date or amendment adoption date is used). The amendment was effective for 3 years and 10 months, so it is phased in for 3 complete 12-month periods.

The monthly accrued benefit, payable at 55 (with an early retirement reduction factor reflecting the 3% per year reduction prior to age 62), for Smith using the $65 benefit formula is:

$65 × 25 years of service × [1 − (.03 × 7 years)] = $1,283.75

The benefit for Smith under the $65 formula is not limited by the PBGC maximum.

The benefit increase and phase-in for Smith under the 7/1/2009 plan is:

Benefit increase: $1,283.75 - $888.75 = $395.00

Phased in benefit increase for Smith = $395.00 × 20% × 3 years = $237.00

The vested accrued benefit increase under the 7/1/2011 plan amendment is also phased in. The amendment was effective for 1 year and 10 months, so it is phased in for 1 complete 12-month period.

The monthly accrued benefit, payable at 55 (with an early retirement reduction factor reflecting the 3% per year reduction prior to age 62), for Smith using the $80 benefit formula is:

$80 × 25 years of service × [1 − (.03 × 7 years)] = $1,580.00

The benefit for Smith under the $80 formula is limited to the PBGC maximum of $1,387.50.

The benefit increase and phase-in for Smith under the 7/1/2011 plan is:

Benefit increase: $1,387.50 - $1,283.75 = $103.75

Phased in benefit increase for Smith = $103.75 × 20% × 1 year = $20.75

Total guaranteed benefit for Smith = $888.75 + $237.00 + $20.75 = $1,146.50

Answer is B.

Question 42

A PBGC reportable event occurs under ERISA section 4043(c)(3) if the number of active participants at any time during a plan year is either less than 80% of the number of active participants as of the beginning of the year, or less than 75% of the number of active participants as of the beginning of the previous year.

In 2012, there are 1,000 active participants as of the first day of the year, and only 740 (74%) as of the last day of the year, so a reportable event has occurred in 2012.

In 2013, there are 740 active participants as of the first day of the year, and this does not decrease during the year. However, the 740 participants is less than 75% of the 1,000 active participants as of the first day of 2012, so a reportable event also occurs in 2013.

A notice of reportable event filing must be made unless there is a waiver of the filing under the regulations of ERISA section 4043. Regulation 4043.23(c) describes two situations for which there is a filing waiver.

(1)   The plan has fewer than 100 participants as of the beginning of either the current or prior plan year
(2)   There is no variable rate premium required for the plan year or the plan has less than $1,000,000 of unfunded vested benefits for the plan year

The plan is not exempt from the reportable event filing because it has far more than 100 active participants, and has more than $1,000,000 of unfunded vested benefits (which would require the payment of a variable rate premium). The statement is true.

Answer is A.

Question 43

ERISA regulation 4006.6(a) defines a participant for PBGC premium purposes as an individual for which the plan has benefit liabilities. The plan in this question has benefit liabilities for the deceased participant. The plan therefore must pay a premium on behalf of the deceased participant. The status of the participant's beneficiary does not have any bearing on the counting of the deceased participant. The statement is false.

Answer is B.

Question 44

IRC section 417(a)(1) requires a defined benefit plan to offer a qualified joint and survivor annuity (QJSA) option to married participants, with a minimum survivor annuity for the spouse of 50% and maximum of 100% of the benefit that would be payable over the joint lives of the participant and the spouse. The QSJA in this question is the 100% J&S benefit.

IRC section 417(c)(1)(A) states that the qualified preretirement survivor annuity (QPSA) percentage cannot be less than the qualified joint and survivor annuity percentage. Therefore, the smallest QPSA percentage that must be provided in this plan is equal to the QJSA percentage of 100%.

The preretirement death benefit payable to a spouse as a QPSA upon the death of the participant is payable at the latest date allowed by law, which is the earliest possible retirement date had the participant not died (IRC section 417(c)(1)(A)(ii)). The benefit payable to the spouse is the spousal benefit that would have been paid if the participant had elected to retire on that earliest retirement date and then died.

Note that no QPSA benefit is required to be paid if the participant and spouse have been married for less than one year as of the date of death (IRC section 417(d)). The question states that the participant and spouse had been married for over one year at the time of death.

Smith has died at age 53 and had 11 years of service, so the earliest age at which Smith could have retired had he not died is in two years, at the early retirement age of 55.

The vested accrued benefit (payable at normal retirement age 65, assumed due to the general conditions of the exam) is:

4% × $100,000 × 11 years of service = $44,000

This must be adjusted to a benefit payable at age 55 (reduced by 3% per year prior to age 65) and further adjusted to a 100% J&S benefit (multiplied by the given adjustment factor of .89).

100% QJSA benefit = $44,000 × [1 − (.03 × 10)] × .89 = $27,412

This is the QPSA benefit payable to Smith's spouse.

Answer is E.

Question 45

The ratio percentage under IRC section 410(b) and as defined in Treasury regulation 1.410(b)-9 is equal to the following ratio:

$$\frac{\dfrac{\#\ of\ NHCEs\ benefiting}{\#\ of\ NHCEs\ nonexcludable}}{\dfrac{\#\ of\ HCEs\ benefiting}{\#\ of\ HCEs\ nonexcludable}}$$

$$\text{Ratio percentage} = \frac{400/9{,}500}{100/500} = 0.2105, \text{ or } 21.05\%$$

The safe harbor percentage under IRC section 410(b) and as defined in Treasury regulation 1.410(b)-4(c)(4)(i) is equal to 50%, reduced by ¾% for each whole percentage point by which the nonhighly compensated employee NHCE) concentration percentage exceeds 60%. In no event can the safe harbor percentage be less than 20%.

The NHCE concentration percentage under Treasury regulation 1.410(b)-4(c)(4)(iii) is the ratio of the number of NHCEs to the number of all employees.

NHCE concentration percentage = 9,500/(9,500 + 500) = 95%

Safe harbor percentage = 50% − [¾% × (95 − 60)] = 23.75%

Note that the safe harbor percentage can also be found in the table provided in Treasury regulation 1.410(b)-4(c)(4)(iv), and that table is provided with the exam.

Safe harbor percentage − ratio percentage = 23.75% − 21.05% = 2.70%

Answer is E.

Question 46

ERISA regulation 4050.5(b)(1) describes the most valuable benefit for a missing participant not yet in pay status as being determined as of the age on or after the deemed distribution date using the most valuable optional form of benefit at any age from the earliest retirement age through normal retirement age. The statement is false.

Answer is B.

Question 47

Treasury regulation 1.410(b)-2(b)(5) states that a plan satisfies the coverage requirements of IRC section 410(b) if the employer does not have any nonhighly compensated employees. The company has only HCEs, so the statement is true.

Answer is A.

Question 48

There is no requirement under Joint Board regulation 901.20 that would require an enrolled actuary to notify the IRS if another actuary subsequently revised work done by the initial enrolled actuary. The statement is false.

Answer is B.