SOCIETY OF ACTUARIES

AMERICAN SOCIETY OF PENSION ACTUARIES

JOINT BOARD FOR THE ENROLLMENT OF ACTUARIES

ENROLLED ACTUARIES PENSION EXAMINATION, SEGMENT B

MAY 2003 EA-2, SEGMENT B, EXAMINATION

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Conditions Generally Applicable to All EA-2 (Segment B) Examination Questions

If applicable, the following conditions should be considered a part of the data for each question, unless otherwise stated or implied.

For purposes of this examination, the "sunset" provisions of the Economic Growth and Tax Relief Reconciliation Act (EGTRRA) should be ignored.

For purposes of this examination, IRS, Treasury and PBGC releases granting disaster relief should be ignored.

General Conditions Regarding Plan Provisions

(1) "Plan" or "pension plan" means a defined benefit pension plan.

(2) The plan is qualified under IRC section 401. Thus, for example, any benefit formulas should be understood to be limited by other plan provisions required by the Code.

(3) The plan is sponsored by a single employer; the sponsoring employer is a taxable entity and is not a member of a controlled group.

(4) The plan is not established or maintained in connection with a collectively bargained agreement.

(5) The plan year, the employer's limitation year, and the employer's tax year are all the calendar year.

(6) The normal retirement age is 65.

(7) Retirement pensions commence at normal retirement age and are paid monthly for life at the beginning of each month.

(8) The plan covers all active employees of the employer; there is no age or service requirement for participation. Thus, when referring to active employees, the terms "employee" and "participant" are synonymous.

(9) There are no, and never have been, mandatory or voluntary employee contributions.

(10) Service for purposes of vesting and benefit accrual is credited on the basis of time elapsed since date of hire.

(11) When the normal retirement benefit is computed as a dollar amount, or as a percentage of compensation, for each year of service, the accrued benefit is defined likewise.

(12) Actuarial equivalence is based on the mortality table and interest rate assumed for funding purposes.

(13) Qualified joint and survivor annuities and qualified preretirement survivor annuities are provided in such manner that they result in no cost to the employer.

(14) The plan has not been top-heavy in any year.

(15) The plan has not been amended since its effective date.

General Conditions Regarding Funding

(16) Any actuarial valuation encompasses not only all active employees but also retired employees, beneficiaries, and former employees entitled to vested deferred pensions.

(17) The valuation date is the first day of the plan year; i.e., participant data, present values, asset values, etc. are as of that date. Also, normal costs are payable annually, the first being due on the valuation date.

(18) Unless otherwise specified, the assumed retirement age is the normal retirement age.

(19) The terms “actuarial value of assets” and “market value of assets” mean the values developed for purposes of IRC section 412, before being adjusted as required under funding methods of the aggregate type for items such as the existing credit balance or the outstanding balances of certain bases.

(20) All actuarial assumptions are deemed “reasonable” and meet the “best estimate” criterion.

(21) The adoption date of any plan or amendment is the same as its effective date.

(22) The term “minimum required contribution” means the smallest contribution for a plan year which will prevent a funding deficiency at the end of that plan year, without regard to the alternative minimum funding standard account. Amounts to be amortized are not combined or offset against one another.

(23) The employer is taxable, and all employer contributions for each prior plan year have been deducted by the employer for its tax year coincident with such plan year.

(24) The full funding limitation has never applied.

(25) The full funding limitations based on current liability shall be disregarded if sufficient information to determine such limitations is not provided.

(26) For purposes of determining the deductible limit, the unfunded current liability shall be disregarded if sufficient information to determine such liability is not provided.

(27) Unless separate current liabilities are provided, the current liability is the same for all purposes.

Miscellaneous General Conditions

(28) All plan provisions and funding comply with all temporary and final regulations under the Internal Revenue Code and ERISA, as amended through December 31, 2002.

*(29) For multiemployer plans, disregard any industry-specific rules.

(30) The employer has never maintained a defined contribution plan. No employee has been covered by a defined contribution plan that is required to be aggregated with his employer’s plans for purposes of IRC section 415.

(31) The terms “applicable mortality (table)” and “applicable interest (rate)” are as defined in IRC section 417(e)(3).

(32) For purposes of coverage testing under IRC section 410(b), "snapshot" testing is not used and permitted disparity is not imputed.

(33) Transition rules under Rev. Rul. 98-1 shall be disregarded unless there is specific reference to such rules.

(34) Where IRC section 401(a)(17) applies, compensations do not exceed these limits unless sufficient information to apply the limits is provided.

(35) Benefits do not exceed IRC section 415 limits unless sufficient information to apply these limits is provided.

*(36) Unless otherwise specified, the plan is covered by the PBGC.

*(37) All union plans are collectively bargained and all union employees are subject to collective bargaining.

(38) References to law and regulation section numbers are for clarity and can be assumed to be correct.

If applicable, the preceding conditions should be considered a part of the data for each question, unless otherwise stated or implied.

LIMITS, TABLES AND FORMULAS
(Included with the 2003 EA-2 (Segment B) examination)

Compensation Limit IRC section 401(a)(17)	
Year	Limit
1989	200,000
1990	209,200
1991	222,220
1992	228,860
1993	235,840
1994-1996	150,000
1997-1999	160,000
2000-2001	170,000
2002-2003	200,000

Maximum Benefit Limit IRC section 415(b)	
Year	Limit at SSRA
1983-1987	90,000
1988	94,023
1989	98,064
1990	102,582
1991	108,963
1992	112,221
1993	115,641
1994	118,800
1995-1996	120,000
1997	125,000
1998-1999	130,000
2000	135,000
2001	140,000
Year	Limit at 65
2002-2003	160,000

Highly Compensated Employee Compensation **IRC section 414(q)**	
Year	**Limit**
1997-1999	80,000
2000-2001	85,000
2002-2003	90,000

Nondiscriminatory Classification Test IRC section 410(b)		
Nonhighly compensated employee concentration percentage	Safe harbor percentage	Unsafe harbor percentage
0-60	50.00	40.00
61	49.25	39.25
62	48.50	38.50
63	47.75	37.75
64	47.00	37.00
65	46.25	36.25
66	45.50	35.50
67	44.75	34.75
68	44.00	34.00
69	43.25	33.25
70	42.50	32.50
71	41.75	31.75
72	41.00	31.00
73	40.25	30.25
74	39.50	29.50
75	38.75	28.75
76	38.00	28.00
77	37.25	27.25
78	36.50	26.50
79	35.75	25.75
80	35.00	25.00
81	34.25	24.25
82	33.50	23.50
83	32.75	22.75
84	32.00	22.00
85	31.25	21.25
86	30.50	20.50
87	29.75	20.00
88	29.00	20.00
89	28.25	20.00
90	27.50	20.00
91	26.75	20.00
92	26.00	20.00
93	25.25	20.00
94	24.50	20.00
95	23.75	20.00
96	23.00	20.00
97	22.25	20.00
98	21.50	20.00
99	20.75	20.00

LIMITS, TABLES AND FORMULAS
(Included with the 2003 EA-2 (Segment B) examination)

Permitted Disparity Tables IRC section 401(*l*)

Age at benefit Commencement	SSRA 65	SSRA 66	SSRA 67	Simplified Table
	Annual factor in maximum excess allowance and maximum offset allowance percent			
70	1.209	1.101	1.002	1.048
69	1.096	0.998	0.908	0.950
68	0.996	0.907	0.825	0.863
67	0.905	0.824	0.750	0.784
66	0.824	0.750	0.700	0.714
65	0.750	0.700	0.650	0.650
64	0.700	0.650	0.600	0.607
63	0.650	0.600	0.550	0.563
62	0.600	0.550	0.500	0.520
61	0.550	0.500	0.475	0.477
60	0.500	0.475	0.450	0.433
59	0.475	0.450	0.425	0.412
58	0.450	0.425	0.400	0.390
57	0.425	0.400	0.375	0.368
56	0.400	0.375	0.344	0.347
55	0.375	0.344	0.316	0.325

FICA Taxable Wage Base

Year	Limit
1992	55,500
1993	57,600
1994	60,600
1995	61,200
1996	62,700
1997	65,400
1998	68,400
1999	72,600
2000	76,200
2001	80,400
2002	84,900
2003	87,000

Key Employee Compensation
IRC section 416

Year	Officer	10 Largest Owners	1% Owners
2000	67,500	30,000	150,000
2001	70,000	35,000	150,000
2002-2003	130,000	N/A	150,000

LIMITS, TABLES AND FORMULAS
(Included with the 2003 EA-2 (Segment B) examination)

Maximum PBGC Guaranteed Life-Only Annuity at Age 65	
Year	Monthly Benefit
1999	3,051.14
2000	3,221.59
2001	3,392.05
2002	3,579.55
2003	3,664.77

FACTORS USED TO REDUCE MAXIMUM PBGC GUARANTEED BENEFITS FOR PAYMENTS OTHER THAN AS A SINGLE LIFE ANNUITY AT AGE 65

Commencement Age	
Age	Factor
65 & over	1.00
64	0.93
63	0.86
62	0.79
61	0.72
60	0.65
59	0.61
58	0.57
57	0.53
56	0.49
55	0.45
54	0.43
53	0.41
52	0.39
51	0.37
50	0.35
49	0.33
48	0.31
47	0.29
46	0.27
45	0.25

Form of Payment Certain & Life*	
Years	Factor
1	0.995
2	0.990
3	0.985
4	0.980
5	0.975
6	0.965
7	0.955
8	0.945
9	0.935
10	0.925

*Reduction decreases by 0.01 per year in excess of 10.

Form of Payment Joint & Contingent		
Percent	Factor	with 10 yr Certain
50%	0.900	× 0.960
66 2/3 %	0.867	× 0.970
75%	0.850	× 0.975
100%	0.800	× 0.990

Form of Payment Joint & Survivor	
Percent	Factor
50%	1.00
66 2/3 %	0.93
75%	0.90
100%	0.80

Age Difference For J&S Beneficiary		
Difference	Younger	Older
1	0.99	1.005
2	0.98	1.010
3	0.97	1.015
4	0.96	1.020
5	0.95	1.025
6	0.94	1.030
7	0.93	1.035
8	0.92	1.040
9	0.91	1.045
10	0.90	1.050

LIMITS, TABLES AND FORMULAS
(Included with the 2003 EA-2 (Segment B) examination)

PBGC ADJUSTMENTS TO VESTED BENEFITS TO DETERMINE VARIABLE PREMIUM

$$\mathrm{VB}_{adj} = \mathrm{VB}_{Pay} \times 0.94^{(RIR-BIR)} + \left[\mathrm{VB}_{Nonpay} \times 0.94^{(RIR-BIR)} \times ((100+\mathrm{BIR})/(100+\mathrm{RIR}))^{(ARA-50)}\right]$$

ARA = Assumed retirement age
RIR = Required interest rate
BIR = Current Liability interest rate
VB_{adj} = Adjusted vested benefits
VB_{pay} = Retiree vested benefits
VB_{nonpay} = All other vested benefits

2003

Data for Question 1 (1 point)

Single-employer pension plan participants: 200
Total employees in the controlled group: 200

Quarterly contribution requirement for 2003 plan year:	$25,000
Credit balance as of 12/31/2002:	$0

Consider the following statement:

If the pension plan sponsor does not make a required quarterly contribution for the 2003 plan year, the sponsor must file a PBGC Form 10 within 30 days after the required due date of the contribution.

Question 1

Is the above statement true or false?

(A) True

(B) False

2003

Data for Question 2   (1 point)

Consider the following statement:

A Qualified Social Security Supplement is a protected benefit under IRC section 411(d)(6).

Question 2

Is the above statement true or false?

(A) True

(B) False

2003

<u>Data for Question 3</u>   (1 point)

A plan distributes a mandatory lump sum payment to 100% vested participant Smith on termination of employment. Smith is subsequently rehired and resumes plan participation.

Consider the following statement:

The plan must allow Smith the option to buy back his past service benefit.

<u>Question 3</u>

Is the above statement true or false?

(A) True

(B) False

2003

Data for Question 4 (1 point)

The normal retirement benefit payable annually to Smith at age 62 as of December 31, 2002 is a $160,000 straight life annuity.

Consider the following statement:

If Smith defers receipt until he is age 63, the benefit of $160,000 cannot be actuarially increased for late retirement.

Question 4

Is the above statement true or false?

(A) True

(B) False

2003

Data for Question 5   (1 point)

Consider the following statement:

For limitation years beginning after December 31, 2001, a multiemployer plan is not combined or aggregated with any single employer plan for purposes of applying the IRC section 415(b)(1)(B) compensation limit for the single employer plan.

Question 5

Is the above statement true or false?

(A) True

(B) False

2003

Data for Question 6 (1 point)

Participant Smith received a partial in-service distribution of $10,000 in 2000 at normal retirement age. Smith did not separate from service and is still employed at the end of 2003.

Consider the following statement:

Smith's distribution of $10,000 is not included in the present value of accrued benefits of Smith for purposes of determining if the plan is top-heavy for 2003.

Question 6

Is the above statement true or false?

(A) True

(B) False

2003

Data for Question 7 (1 point)

Consider the following statement:

If no key employees are included in a collectively-bargained plan, then the collectively-bargained plan is not part of the required aggregation group for top-heavy purposes.

Question 7

Is the above statement true or false?

(A) True

(B) False

2003

Data for Question 8 (1 point)

Consider the following statement:

Withdrawal liability must be determined using the actuarial assumptions for funding the plan in the plan year prior to the plan year in which the withdrawal occurs.

Question 8

Is the above statement true or false?

(A) True

(B) False

2003

Data for Question 9 (1 point)

A plan exchanges property with a party-in-interest. The trustee was not aware that the person with whom the exchange was made was a party-in-interest.

Consider the following statement:

Because the fiduciary had no knowledge that the transaction involved a party-in-interest, it is not considered a prohibited transaction.

Question 9

Is the above statement true or false?

(A) True

(B) False

2003

Data for Question 10 (1 point)

Consider the following statement:

The plan instrument may designate named fiduciaries or may specify a procedure for naming fiduciaries.

Question 10

Is the above statement true or false?

(A) True

(B) False

2003

Data for Question 11 (1 point)

An enrolled actuary discovers that her signed Schedule B of Form 5500, which should have been filed, was not filed.

Consider the following statement:

The enrolled actuary must provide written notification of the non-filing to the appropriate government agency where it should have been filed.

Question 11

Is the above statement true or false?

(A) True

(B) False

2003

Data for Question 12 (1 point)

Consider the following statement:

Upon partial termination of a pension plan, the non-vested benefits must be vested to the extent funded for all participants employed immediately prior to the partial termination.

Question 12

Is the above statement true or false?

(A) True

(B) False

2003

Data for Question 13 (4 points)

Company X sponsors Plans A, B, and C. Company X's fiscal year is the calendar year. Current liability values shown below are based on the yield on 30-year Treasuries for the last month of the plan year.

Results as of the last days of various plan years are as follows:

Plan A	Values as of 12/31/2001	12/31/2002
Vested Current Liability	$960,000,000	$980,000,000
Total Current Liability	965,000,000	985,000,000
Market Value of Assets	900,000,000	955,000,000
Actuarial Value of Assets	905,000,000	935,000,000
Credit Balance	10,000,000	10,000,000

Plan B	Values as of 01/31/2002	01/31/2003
Vested Current Liability	$100,000,000	$120,000,000
Total Current Liability	105,000,000	125,000,000
Market Value of Assets	80,000,000	85,000,000
Actuarial Value of Assets	70,000,000	84,000,000
Credit Balance	0	0

Plan C	Values as of 12/31/2001	12/31/2002
Vested Current Liability	$200,000,000	$220,000,000
Total Current Liability	220,000,000	242,000,000
Market Value of Assets	215,000,000	230,000,000
Actuarial Value of Assets	250,000,000	275,000,000
Credit Balance	0	0

Question 13

In what range is the minimum amount of unfunded liability used to determine if the company has exceeded the $50,000,000 reporting threshold for fiscal year 2002 reported in 2003 under ERISA section 4010?

(A) Less than $40,000,000

(B) $40,000,000 but less than $50,000,000

(C) $50,000,000 but less than $60,000,000

(D) $60,000,000 but less than $70,000,000

(E) $70,000,000 or more

2003

Data for Question 14 (4 points)

Pension plan accrued benefit:	(0.7% times final average pay up to Covered Compensation plus X% times final average pay over Covered Compensation) times the lesser of service or 40
Early retirement age:	Age 62
Early retirement benefit:	Accrued benefit payable immediately
Profit sharing allocation formula:	5% of pay up to 75% of the Social Security Taxable Wage Base plus 6% of pay over 75% of the Social Security Taxable Wage Base

All employees are covered by both pension and profit sharing plans.

All participants are age 21 or older. The plans satisfy the IRC section 401(ℓ) "Safe Harbor" requirements.

Question 14

In what range is the maximum value of X?

(A) Less than 1.040%

(B) 1.040% but less than 1.070%

(C) 1.070% but less than 1.100%

(D) 1.100% but less than 1.130%

(E) 1.130% or more

2003

Data for Question 15 (3 points)

A plan covers collectively bargained ("union") and non-collectively bargained ("non-union") employees.

The following are the employees meeting the minimum age and service conditions of the plan:

Highly compensated non-union employees	50
Non-highly compensated non-union employees	300
Non-highly compensated union employees	500

The following identifies the normal accrual rates and most valuable accrual rates for those employees participating in the plan:

Normal accrual rate	1.20%	1.10%	1.20%	1.30%
Most valuable accrual rate	2.20%	2.20%	2.10%	2.30%
Non-union HCEs	10	5	10	10
Non-union NHCEs	40	50	20	20
Union NHCEs	20	20	30	20

Question 15

In what range is the ratio percentage for the rate group with a normal accrual rate of 1.20% and a most valuable accrual rate of 2.20%?

(A) Less than 30%

(B) 30% but less than 45%

(C) 45% but less than 60%

(D) 60% but less than 75%

(E) 75% or more

2003

Data for Question 16 (4 points)

A company sponsors two defined benefit plans: Plan A and Plan B

Plan A eligibility: No age or service requirement
Plan B eligibility: Age 21 and 1 year of service

No employee is in more than one plan.

Otherwise excludable employees are not tested separately.

Data for all employees:

	Plan A	Plan B
Highly Compensated Employees		
At least age 21 and 1 year of service	40	10
Under age 21 or less than 1 year of service	4	1
Non-Highly Compensated Employees		
At least age 21 and 1 year of service	100	235
Under age 21 or less than 1 year of service	20	30

Consider the following statements regarding non-discrimination testing:

I. If the plans are tested separately, the testing group for Plan B is composed of 385 non-excludable employees.

II. If the plans are permissively aggregated for testing purposes, the non-highly compensated employee concentration percentage is at least 87%.

III. If the plans are permissively aggregated for testing purposes, the testing group is composed of less than 425 employees.

Question 16

Which, if any, of these statements are true?

(A) I and II only

(B) I and III only

(C) II and III only

(D) I, II, and III

(E) The correct answer is not given by (A), (B), (C), or (D) above.

2003

Data for Question 17 (4 points)

Plan A is a defined benefit plan covering two highly compensated employees.

Plan B is a profit sharing plan covering Smith, a non-highly compensated employee.

There are no other employees.

Plan A retirement benefit:	5.0% of compensation for each year of service
Plan A actuarial equivalence:	8.0% interest Pre-retirement mortality: None Post-retirement mortality: Applicable mortality table

Discrimination testing assumptions:

Testing Age	Age 65
Testing assumptions	Plan A actuarial equivalence
Testing compensation	Current year compensation
Testing method	Benefits basis, annual accrual
Permitted disparity	Not imputed
Testing date	December 31, 2003
Grouping	None

Data for all employees:

	HCE 1	HCE 2	Smith
Date of birth	12/31/1954	12/31/1944	12/31/1964
Compensation for all years	\$200,000	\$150,000	\$50,000

Life annuity factor at age 65 using 8.0% interest and applicable mortality table: 9.35

Question 17

In what range is the lowest contribution rate that Plan B must provide to Smith in order for the plans to pass the 2003 general nondiscrimination test on an aggregated basis?

(A) Less than 4.75%

(B) 4.75% but less than 5.50%

(C) 5.50% but less than 6.25%

(D) 6.25% but less than 7.00%

(E) 7.00% or more

2003

Data for Question 18 (2 points)

A company considers implementing two defined benefit plans: Plan A and Plan B.

Plan A proposed benefit formula: 1.25% of 3-year final average compensation times service
Plan B proposed benefit formula: 1.00% of 3-year final average compensation times service

All other provisions of the two plans would be identical.

Consider the following data for all employees in the controlled group:

	Highly Compensated Employees	Non-Highly Compensated Employees
Proposed employees benefiting under Plan A	35	0
Proposed employees benefiting under Plan B	0	70

Question 18

In what range is the minimum number of non-highly compensated employees that need to benefit under Plan A in order to satisfy the requirements of IRC section 401(a)(26)?

(A) None

(B) 1 but less than 6

(C) 6 but less than 11

(D) 11 but less than 16

(E) 16 or more

2003

Data for Question 19 (4 points)

Company A sponsors a pension plan and a profit sharing plan. Both plans use the top-paid group election.

Pension plan eligibility: Non-collectively bargained employees

Pension plan participation: One year of service

All employees are over age 21.

The following table identifies all employees:

	Non-Collectively Bargained	Collectively Bargained
Under 6 months of service	30	0
6 months, but less than 1 year service	10	0
1 year or more of service	160	20

Data for selected employees:

	Smith	Jones	Brown	Green
2002 total compensation	$98,000	$92,000	$96,000	$94,000
2002 401(k) deferral	11,000	4,000	3,000	1,000
Ranking by pay (from highest)	35th	41st	37th	39th
5% owner in 2002	N	N	N	N
5% owner in 2003	N	N	N	Y
Participates in pension plan	Y	N	Y	Y

Question 19

How many of Smith, Jones, Brown and Green are not HCEs in 2003?

(A) None

(B) 1

(C) 2

(D) 3

(E) 4

2003

<u>Data for Question 20</u> (2 points)

Consider the following benefits:

I. Ancillary life insurance protection

II. A single sum benefit payable at separation from service

III. A joint and 75% survivor life annuity wherein the plan also offers joint and 50% survivor and joint and 100% survivor life annuity options.

<u>Question 20</u>

Which, if any, of the above benefits may be eliminated by amendment without violating IRC section 411(d)(6)?

(A) I and II

(B) I and III

(C) II and III

(D) I, II, and III

(E) The correct answer is not given by (A), (B), (C), or (D) above

2003

Data for Question 21 (3 points)

Optional form of payment:	Lump sum
Lump sum actuarial equivalence:	
Prior to December 31, 2002:	The applicable mortality table is defined under Revenue Ruling 95-6 and the applicable interest rate is determined using the October interest rate of the prior plan year.
Beginning December 31, 2002:	The applicable mortality table is defined under Revenue Ruling 2001-62 and the applicable interest rate is determined using the September interest rate of the prior plan year.

Data for participant Smith:

Date of birth:	1/1/1938
Date of hire:	1/1/1990
Date of retirement:	1/1/2003
Accrued benefit on 1/1/2003:	$1,000 per month

The applicable interest rate for September 2002 is 5.08% and the applicable interest rate for October 2002 is 4.76%.

Selected annuity factors:

	Mortality Table under Revenue Ruling 95-6		Mortality Table under Revenue Ruling 2001-62	
	4.76%	5.08%	4.76%	5.08%
Age 65	11.77	11.46	12.04	11.71

Question 21

In what range is the lump sum payment to Smith on January 1, 2003?

(A) Less than $137,000

(B) $137,000 but less than $139,000

(C) $139,000 but less than $141,000

(D) $141,000 but less than $143,000

(E) $143,000 or more

2003

Data for Question 22 (3 points)

Plan year prior to July 1, 2000:	Calendar year
Plan year after June 30, 2000:	July 1 to June 30
Vesting service:	One year for each vesting computation period in which an employee age 18 or over earns at least 1,000 hours of service
Vesting computation period:	12-month period beginning on the first day of the plan year

Data for participant Smith:

Birth Date: 1/1/1981

12 months ending	Hours	12 months ending	Hours
December 31, 1997	1,000	June 30, 1997	1,000
December 31, 1998	1,000	June 30, 1998	1,000
December 31, 1999	900	June 30, 1999	1,000
December 31, 2000	1,000	June 30, 2000	1,000
December 31, 2001	900	June 30, 2001	1,000
December 31, 2002	900	June 30, 2002	1,000
December 31, 2003	900	June 30, 2003	1,000
		June 30, 2004	1,000

Question 22

In what range is the number of years of vesting service Smith has earned at the end of the plan year ending in 2003?

(A) Less than 3

(B) 3

(C) 4

(D) 5

(E) 6 or more

2003

Data for Question 23 (3 points)

Plan year: 10/1 through 9/30

Lump sum benefit: IRC §417(e) applicable interest rate and applicable mortality table

Lookback period: Four months
Stability period: One calendar year

Data for participant Smith:

Date of birth	2/1/1938
Date of termination	7/1/2002
Date of payment	2/1/2003
Accrued benefit	$1,000 per month

Average 30-year Treasury rate and related annuity factors by month:

	Rate	$\ddot{a}_{65}^{(12)}$		Rate	$\ddot{a}_{65}^{(12)}$
April, 2001	5.65%	11.176	April, 2002	5.68%	11.148
May, 2001	5.78%	11.059	May, 2002	5.65%	11.176
June, 2001	5.67%	11.158	June, 2002	5.52%	11.295
July, 2001	5.61%	11.212	July, 2002	5.39%	11.416
August, 2001	5.48%	11.332	August, 2002	5.08%	11.714
September, 2001	5.48%	11.332	September, 2002	4.76%	12.038
October, 2001	5.32%	11.482	October, 2002	4.93%	11.864
November, 2001	5.12%	11.675	November, 2002	4.96%	11.834
December, 2001	5.48%	11.332	December, 2002	4.92%	11.874
January, 2002	5.45%	11.360			
February, 2002	5.40%	11.407			
March, 2002	5.71%	11.121			

Question 23

In what range is Smith's lump sum on 2/1/2003?

(A) Less than $135,000

(B) $135,000 but less than $138,000

(C) $138,000 but less than $141,000

(D) $141,000 but less than $144,000

(E) $144,000 or more

2003

Data for Question 24 (5 points)

Plan effective date:	January 1, 1980
Normal retirement benefit:	100% of highest 3-year average compensation
Date of entry:	Age 21 and 1 year of service
Early retirement eligibility:	Age 55
Early retirement benefit:	Normal retirement benefit reduced 3% per year from age 65 to age 62, 6% per year from age 62 to age 55
Lump sum benefit:	Present value of immediate benefit
Pre-retirement death benefit:	Present value of accrued benefit

Data for participant Smith:

Date of birth	1/1/1948
Date of employment	1/1/1995
Date of retirement	1/1/2003
Highest 3-year average compensation	$170,000

Plan actuarial equivalence: 1983 Group Annuity Mortality table; 5% interest

Applicable interest rate: 5.68%

Selected immediate annuity factors $\ddot{a}_x^{(12)}$:

Age	5.00% 1983 GAM	5.00% Applicable mortality	5.68% Applicable mortality
55	13.63	14.35	13.39
62	11.64	12.46	11.74
65	10.69	11.53	10.92

Question 24

In what range is the lump sum benefit payable to Smith as of 1/1/2003?

(A) Less than $820,000

(B) $820,000 but less than $900,000

(C) $900,000 but less than $980,000

(D) $980,000 but less than $1,060,000

(E) $1,060,000 or more

Data for Question 25 (3 points)

Plan interest rate for actuarial equivalence: 6%

Plan mortality table for actuarial equivalence: Applicable mortality

Benefits are forfeited on the pre-retirement death of a participant.

Data for participant Smith:

Age at retirement	55
Service at retirement	10 years
Form of benefit	Life annuity

Selected actuarial factors:

	$v^{10}\ {}_{10}p_{55}$	$v^{3}\ {}_{3}p_{62}$	$\ddot{a}_{55}^{(12)}$	$\ddot{a}_{62}^{(12)}$	$\ddot{a}_{65}^{(12)}$
Applicable mortality, 5% interest	0.5775	0.8408	14.57	12.68	11.79
Applicable mortality, 6% interest	0.5253	0.8172	13.15	11.61	10.87

Question 25

In what range is the age-adjusted dollar limit under IRC section 415(b) in 2003 for the benefits payable to Smith?

(A) Less than \$74,000

(B) \$74,000 but less than \$83,000

(C) \$83,000 but less than \$92,000

(D) \$92,000 but less than \$101,000

(E) \$101,000 or more

2003

Data for Question 26 (2 points)

Normal retirement benefit: $300 per month per year of service

Early retirement eligibility: Age 60 and 10 years of service

Early retirement reduction: None

Data for participant Smith:

Date of birth	1/1/1941
Date of hire	1/1/1993
Date of retirement	1/1/2003

Year	Annual Compensation
1993	$15,000
1994	16,000
1995	17,000
1996	18,000
1997	19,000
1998	25,000
1999	23,000
2000	22,000
2001	22,000
2002	22,000

Question 26

In what range is the annual early retirement benefit payable to Smith at age 62?

(A) Less than $18,000

(B) $18,000 but less than $23,000

(C) $23,000 but less than $28,000

(D) $28,000 but less than $33,000

(E) $33,000 or more

2003

Data for Question 27 (4 points)

Plan effective date:	January 1, 1980
Participation:	One year of service
Accrued benefit:	10% times average pay times service
Early retirement eligibility:	Age 60 with 5 years of service
Early retirement benefit:	Accrued benefit reduced 6½% per year prior to age 65
Joint and 50% survivor benefit:	95% of the benefit payable in the normal form

There is a complete forfeiture of benefits on a pre-retirement death.

Data for participant Smith:

Date of birth	1/1/1943
Date of hire	1/1/1993
Date of retirement	1/1/2003
Pay in all years	$200,000
Payment option chosen	Joint and 50% survivor
Spouse date of birth	1/1/1943

Actuarial factors at 5% interest and applicable mortality for participant Smith and his spouse:

	Age 60	Age 62	Age 65
Single life annuity	13.251	12.680	11.794
Joint and 50% survivor annuity	14.231	13.700	12.859
$v^{65-\text{age}}\ {}_{65-\text{age}}p_{\text{age}}$	0.753	0.841	1.000

Question 27

In what range is Smith's annual retirement benefit commencing 1/1/2003?

(A) Less than $115,000

(B) $115,000 but less than $119,000

(C) $119,000 but less than $123,000

(D) $123,000 but less than $127,000

(E) $127,000 or more

Data for Question 28 (4 points)

Plan effective date:	1/1/2002
Valuation date:	1/1
Normal retirement age:	Age 65
Benefit formula:	1% of three-year average compensation for each year of participation
Top-heavy minimum benefit:	2% of five-year average compensation for each year of participation the plan is top-heavy. Top-heavy minimums are for non-key employees only.
Top-heavy determination assumptions:	5% pre-retirement interest No pre-retirement mortality Annuity factor at age 65 equals 10.0

Active participant data as of 12/31/2002:

	Smith	Jones
Date of birth	1/1/1948	1/1/1955
Date of hire	1/1/2000	1/1/1995
Compensation for all years	$100,000	$84,000
Key employee	Yes	No

Smith and Jones are the only participants in the plan.

Question 28

What is the top-heavy percentage for the 2003 plan year?

(A) Less than 20%

(B) 20% but less than 40%

(C) 40% but less than 60%

(D) 60% but less than 80%

(E) 80% or more

2003

Data for Question 29 (4 points)

Employer A sponsors both a defined benefit and a profit sharing plan.

Plan effective date (both plans): January 1, 1980

Data for all participants:

		Present Values of Accrued Benefit		Profit Sharing Account Balances	
Participant	Status	1/1/2002	1/1/2003	12/31/2001	12/31/2002
1	50% owner	$360,000	$367,500	$45,000	$55,000
2	50% owner	100,000	102,000	37,000	35,000
3	Non-key	100,000	115,000	10,000	45,000
4	Non-key	50,000	65,000	5,000	30,000
5	Non-key	40,000	50,000	5,000	20,000

Participant 2 terminates employment in 2001 and is credited with no hours of service after termination of employment.

All other participants are employed, earning at least 1,000 hours of service per year.

Participant 2 has not taken a distribution of benefits from either plan.

In-service distribution to Participant 5 from the profit sharing plan in 1999: $55,000.

Question 29

In what range is the top-heavy percentage for the year beginning 1/1/2003?

(A) Less than 54%

(B) 54% but less than 57%

(C) 57% but less than 60%

(D) 60% but less than 63%

(E) 63% or more

2003

<u>Data for Question 30</u> (4 points)

Plan B is to be spun-off from Plan A on December 31, 2003.

Information as of December 31, 2003:

	Plan A (Before Spin-off)	Plan B
Accrued liability including normal cost	$12,400,000	$2,500,000
OBRA current liability including the expected increase for benefits accruing during the year	8,400,000	1,400,000
RPA current liability including the expected increase for benefits accruing during the year	7,900,000	1,200,000
ERISA 4044 termination liability	9,800,000	1,600,000
Market value of assets	11,000,000	
Actuarial value of assets	11,350,000	

The sponsors of Plan A and Plan B are part of the same controlled group.

The sponsors of Plan A and Plan B do not intend to terminate either plan.

<u>Question 30</u>

In what range is the market value of assets to be spun-off to Plan B?

(A) Less than $1,700,000

(B) $1,700,000 but less than $1,800,000

(C) $1,800,000 but less than $1,900,000

(D) $1,900,000 but less than $2,000,000

(E) $2,000,000 or more

2003

Data for Question 31 (2 points)

Consider the following dates in connection with a merger or spin-off:

I. The date on which the affected employees stop accruing benefits in one plan and begin coverage and benefit accruals under another plan

II. The date as of which the amount of assets to be eventually transferred is calculated

III. If the merger or spin-off agreement provides that interest is to accrue from a certain date to the date of actual transfer, the date from which such interest will accrue

Question 31

Which, if any, of the above dates are relevant to the determination of the actual date of a merger or spin-off?

(A) I and II only

(B) I and III only

(C) II and III only

(D) I, II, and III

(E) The correct answer is not given by (A), (B), (C), or (D) above

2003

Data for Question 32 (4 points)

Early retirement eligibility:	Age 55 with 10 years of service
Early retirement benefit:	Accrued benefit reduced 4% per year prior to age 65
Pre-retirement death benefit:	Minimum required death benefit, subsidized by the plan
Joint and 50% survivor benefit:	95% of the benefit payable in the normal form

Lump sum values include the value of early retirement subsidies.

Data for selected participants:	Smith	Jones
Date of birth	1/1/1953	1/1/1943
Spouse's date of birth	1/1/1953	1/1/1943
Date of hire	1/1/1992	1/1/1997
Date married	7/1/1997	7/1/1973
Monthly accrued benefit	\$100	\$100
Date of death	1/1/2003	1/1/2003

Selected annuity factors using the applicable interest rate and the applicable mortality table:

	Age 50	Age 60	Age 65
Immediate	14.04	12.08	10.87
Deferred to age 55	9.71	N/A	N/A
Deferred to age 65	4.22	7.80	10.87

Question 32

In what range is the sum of the lump sum values of the minimum survivors' benefits the plan must provide to Smith's and Jones' surviving spouses?

(A) Less than \$7,000

(B) \$7,000 but less than \$8,000

(C) \$8,000 but less than \$9,000

(D) \$9,000 but less than \$10,000

(E) \$10,000 or more

Data for Question 33 (2 points)

Plan year for which the PBGC premium payment is due:	2003
Valuation interest rate:	8.0% per year
PBGC required interest rate as of 1/1/2003:	4.92% per year
Value of plan assets as of 12/31/2001, (including 2001 receivable contribution):	$900,000
Value of plan assets as of 12/31/2002, (including 2002 receivable contribution):	$905,000
Contribution for the 2001 plan year paid on 7/1/2002:	$180,000
Contribution for the 2002 plan year paid on 7/1/2003:	$16,000

The plan has 600 participants.

The 2002 Schedule B of Form 5500 and the 2003 PBGC Form Schedule A are filed on 7/31/2003.

Question 33

In what range is the adjusted value of plan assets used for the Alternative Calculation Method that will appear on the 2003 PBGC Form Schedule A?

(A) Less than $897,000

(B) $897,000 but less than $901,000

(C) $901,000 but less than $905,000

(D) $905,000 but less than $909,000

(E) $909,000 or more

2003

Data for Question 34 (5 points)

Plan effective date:	1/1/1980
Normal retirement age:	65
Early retirement eligibility:	Age 60 with 25 years of service
Early retirement benefit:	Accrued benefit payable immediately
Monthly benefit before 1/1/2000:	$50 times all years of service
Monthly benefit after 12/31/1999:	$55 times all years of service
Normal form of payment:	Life annuity with 3% annual cost of living increase
Plan termination date:	12/31/2003
Market value of assets as of 12/31/2003:	$300,000

Data for all participants as of 12/31/2003:

	Smith	Jones
Date of birth	1/1/1936	1/1/1939
Date of hire	1/1/1973	1/1/1974
Date of retirement	1/1/1998	
Annuity elected	Normal form	

Selected annuity values as of 12/31/2003 using PBGC assumptions:

	Age 62	Age 65	Age 68
Life annuity	12.10	10.81	9.88
Life annuity with 3% cost of living increase	15.64	14.61	12.61

Question 34

In what range are the assets allocated to Smith under ERISA §4044?

(A) Less than $138,000

(B) $138,000 but less than $140,000

(C) $140,000 but less than $142,000

(D) $142,000 but less than $144,000

(E) $144,000 or more

2003

Data for Question 35 (2 points)

Consider the following statements with respect to pre-termination restrictions on plan distributions:

I. When determining whether or not an employee's distribution must be restricted, a plan must use the actuarial value of plan assets when determining whether or not the value of plan assets equals or exceeds 110% of current liabilities.

II. A plan may be amended to increase the number of restricted employees to more than 25 without violating the anti-cutback rule under IRC 411(d)(6).

III. If a restricted employee's distribution is determined to be restricted, that employee must elect a form of annuity that pays benefits no greater than the restricted employee's life annuity.

Question 35

Which, if any, of the above statements is (are) true?

(A) None

(B) I only

(C) II only

(D) III only

(E) The correct answer is not given by (A), (B), (C), or (D) above

Data for Question 36 (4 points)

Type of plan: Multiemployer

History of employer contribution base units:

Year	Employer A Hours	Contribution Rate
1989	100,000	$2.50
1990	120,000	2.50
1991	270,000	2.50
1992	190,000	2.75
1993	250,000	2.75
1994	250,000	2.75
1995	220,000	2.75
1996	260,000	2.75
1997	80,000	3.00
1998	85,000	3.00
1999	73,000	3.00
2000	42,000	3.00
2001	47,000	3.00
2002	55,000	3.25
2003	60,000	3.25

There have been no withdrawals from the plan prior to Employer A's withdrawal.

Question 36

In what range is Employer A's initial annual partial withdrawal liability payment after Employer A's partial withdrawal due to a 70% decline in contribution base units?

(A) Less than $500,000

(B) $500,000 but less than $520,000

(C) $520,000 but less than $540,000

(D) $540,000 but less than $560,000

(E) $560,000 or more

2003

Data for Question 37 (3 points)

Type of plan: Multiemployer

Plan effective date: 1/1/1996

Withdrawal liability method: Rolling five (one pool) with mandatory de minimis rule

Employer A joins the plan on 1/1/1997.

History of employer contributions:

Year	Employer A	All Employers
1996		$900,000
1997	$140,000	980,000
1998	110,000	1,050,000
1999	125,000	1,300,000
2000	135,000	1,350,000
2001	125,000	1,400,000
2002	145,000	1,450,000

Unfunded present value of vested benefits as of 12/31/2001: $2,030,000

Unfunded present value of vested benefits as of 12/31/2002: $2,200,000

Employer A withdraws from the plan in 2002. There have been no other withdrawals from the plan.

Question 37

In what range is Employer A's withdrawal liability?

(A) Less than $187,500

(B) $187,500 but less than $200,000

(C) $200,000 but less than $212,500

(D) $212,500 but less than $225,000

(E) $225,000 or more

2003

Data for Question 38 (2 points)

Prohibited transaction (not a participant loan) amount:	$100,000
Date of prohibited transaction:	7/1/2003
Date prohibited transaction corrected:	6/30/2004
Company tax year end:	12/31

Question 38

In what range is the total statutory excise tax arising from the prohibited transaction?

(A) Less than $12,500

(B) $12,500 but less than $20,000

(C) $20,000 but less than $27,500

(D) $27,500 but less than $35,000

(E) $35,000 or more

2003

Data for Question 39 (2 points)

Consider the following statements about standards of performance for enrolled actuaries:

I. An enrolled actuary may be suspended for failure to file personal income tax returns.

II. An enrolled actuary shall not perform actuarial services if she has knowledge of a conflict of interest with respect to the performance of such actuarial services.

III. An enrolled actuary shall not perform actuarial services for any organization that she believes may use those services in a fraudulent manner.

Question 39

Which of the above statements are true?

(A) None

(B) I and II only

(C) I and III only

(D) II and III only

(E) The correct answer is not given by (A), (B), (C), or (D) above.

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Answer Key

Question	Answer	Question	Answer
1	B	21	E
2	A	22	C
3	B	23	E
4	A	24	A
5	A	25	C
6	B	26	C
7	A	27	C
8	B	28	C
9	B	29	B
10	A	30	D
11	A	31	D
12	B	32	B
13	B	33	E
14	B	34	E
15	C	35	C
16	A	36	B
17	D	37	C
18	C	38	D
19	B	39	C
20	B		