SOCIETY OF ACTUARIES

AMERICAN SOCIETY OF PENSION ACTUARIES

JOINT BOARD FOR THE ENROLLMENT OF ACTUARIES

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JOINT BOARD BASIC EXAMINATION

This is the November 1997 examination which has been released to the public by the administering organizations.

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Conditions Generally Applicable to All EA-2 Examination Questions

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

General Conditions Regarding Plan Provisions

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

(2) The plan is qualified under Code 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 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 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) The actuarial cost method, or funding method, is "reasonable" within the meaning of Code Section 412 and the regulations thereon. Thus, for example, the unit credit cost method should be used in accordance with the regulations under Code Section 412.

(19) Where the normal cost under an actuarial cost method may be computed as either a level percentage of compensation or a level dollar amount, the level percentage approach is used if the plan benefits are based on compensation, and the level dollar approach is used if they are not.

(20) Under the frozen initial liability method, whenever there is a change in the plan, actuarial assumptions, or asset valuation method, the unfunded liability is adjusted by adding to it the increase (positive or negative) in the unfunded entry age normal accrued liability due to the change. Likewise, under the attained age normal method, the unfunded liability is adjusted by adding to it the increase in the unfunded unit credit accrued liability.

(21) The terms "actuarial value of assets" and "market value of assets" mean the values developed for purposes of Code 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.

(22) All actuarial assumptions are deemed "reasonable" and meet the "best estimate" criterion.

(23) The actuarial cost method, asset valuation method, and actuarial assumptions have not been changed since the plan effective date.

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

(25) 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.

(26) Additional funding charges and additional interest charges due to late quarterly contributions have never applied.

(27) No waivers of funding deficiencies or extensions of amortization periods have been granted.

(28) The interest rate used for amortizing waivers and for extensions of amortization periods is the same as the valuation interest rate.

(29) 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.

(30) For purposes of determining the deductible limit for any year, the employer does not use (and has never used) the fresh-start alternative and does not combine (and has never combined) amortization bases.

(31) The full funding limitation has never applied.

(32) Expenses are paid directly by the employer, rather than from the assets of the plan, and therefore do not affect the funding of the plan.

(33) Assumed compensation increases first apply to the year immediately following the latest year for which valuation compensation is shown.

<u>Miscellaneous General Conditions</u>

(34) All plan provisions and funding comply with all temporary and final regulations under the Internal Revenue Code and ERISA, as amended through June 30, 1997.

(35) The employer has never maintained a defined contribution plan. No employee has been covered by a defined contribution plan which is required to be aggregated with his employer's plans for purposes of Code Section 415.

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

Conditions Specially Applicable to All 1997 EA-2 Examination Questions

(1) The additional funding charge shall be disregarded if sufficient information to determine such charge is not provided.

(2) For purposes of determining the additional funding charge, the optional rule and the transition rule shall be disregarded unless there is specific reference to such rules.

(3) The quarterly contribution requirement shall be disregarded if sufficient information to determine such requirement is not provided.

(4) The full funding limitations based on 90% or 150% of the current liability shall be disregarded if sufficient information to determine such limitations is not provided.

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

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

1997

Data for Question 1 (1 point)

	1/1/93	1/1/94	1/1/95	1/1/96
Funded current liability percentage	95%	90%	80%	75%
Number of employees on each day of the plan year	125	135	140	130

Consider the following statement:

The plan is subject to the additional funding requirements for the 1996 plan year.

Question 1

Is the above statement true or false?

(A) True

(B) False

1997

Data for Question 2 (1 point)

Consider the following statement:

In a plan with an effective date of January 1, 1997 the highest paid officer is an HCE regardless of compensation.

Question 2

Is the above statement true or false?

(A) True

(B) False

1997

Data for Question 3 (1 point)

Consider the following statement:

> A frozen defined benefit plan is deemed to satisfy the minimum participation rules of IRC section 401(a)(26) if it is not top-heavy and is also not aggregated with any other plan to enable the other plan to satisfy IRC section 401(a)(4) or 410(b).

Question 3

Is the above statement true or false?

(A) True

(B) False

Data for Question 4 (1 point)

Consider the following statement:

For plan years starting after 1996, a defined benefit plan that benefits at least the lesser of 50 employees or 40% of all employees of the employer will satisfy the requirements of IRC section 401(a)(26).

Question 4

Is the above statement true or false?

(A) True

(B) False

1997

Data for Question 5 (1 point)

Consider the following statement:

> 150% of current liability is used in the determination of the full funding limit. It is acceptable to calculate this current liability assuming the sex distinct mortality table used for funding and an interest rate equal to 110% of the four year weighted average of 30-year Treasury securities provided the plan used the maximum permissible interest rate to calculate the additional funding charge required under IRC section 412(l).

Question 5

Is the above statement true or false?

(A) True

(B) False

1997

Data for Question 6 (1 point)

Consider the following statement:

> 90% of current liability is used in the determination of the full funding limit. For a plan year beginning in 1996, this current liability must be calculated using the 1983 GAM unisex mortality table and an interest rate within 90% to 107% of the four year weighted average of 30-year Treasury securities.

Question 6

Is the above statement true or false?

(A) True

(B) False

Data for Question 7 (1 point)

Consider the following statement:

> The deductible limit for a plan with more than 100 participants is no less than the amount necessary to fund 100% of current liability. For a plan year beginning in 1997, this current liability must be calculated using the plan's mortality table and an interest rate within 90% to 110% of the four year weighted average of 30-year Treasury securities.

Question 7

Is the above statement true or false?

(A) True

(B) False

1997

Data for Question 8 (1 point)

Consider the following statement:

Under ERISA, the following are all parties in interest with respect to a plan:

- the employer/sponsor
- an employee of the employer
- the enrolled actuary providing services to the plan.

Question 8

Is the above statement true or false?

(A) True

(B) False

1997

Data for Question 9 (1 point)

Consider the following statement:

Prior service may be ignored for a participant who was hired in 1992, completed 2 years of service, terminated prior to vesting and was subsequently reemployed 3 years later.

Question 9

Is the above statement true or false?

(A) True

(B) False

Data for Question 10 (1 point)

Consider the following statement:

> As a result of the Retirement Protection Act of 1994, all scheduled benefit increases for collectively bargained plans (other than multiemployer plans) must be recognized for the current year's minimum funding requirement, including the determination of the current liability.

Question 10

Is the above statement true or false?

(A) True

(B) False

1997

Data for Question 11 (1 point)

Consider the following statement:

> For purposes of minimum coverage testing under IRC section 410(b), the section 401(k) portion and the section 401(m) portion of a plan are mandatorily disaggregated.

Question 11

Is the above statement true or false?

(A) True

(B) False

Data for Question 12 (1 point)

Consider the following statement:

> In determining the average benefit percentage under IRC section 410(b), the actual benefit percentage takes into account IRC section 401(k) pre-tax deferrals and employee post-tax deferrals.

Question 12

Is the above statement true or false?

(A) True

(B) False

1997

Data for Question 13 (1 point)

Consider the following statement:

The Pension Simplification Act of 1996 eliminated the IRC section 401(a)(9) requirement to begin distributing benefits to any participant of a qualified plan who is over age 70 1/2 and is still employed by the plan sponsor.

Question 13

Is the above statement true or false?

(A) True

(B) False

Data for Question 14 (1 point)

Consider the following statement:

> A plan is exempt from the variable rate PBGC premium for a given year if, for the previous plan year, the plan sponsor contributed an amount equal to the full funding limit based on assets unadjusted for the credit balance in the funding standard account.

Question 14

Is the above statement true or false?

(A) True

(B) False

Data for Question 15 (1 point)

Consider the following statement:

> A plan is not subject to the liquidity shortfall contribution requirement in a given plan year if, as of the beginning of the prior plan year, the ratio of the actuarial value of assets (not reduced for any credit balance) to the current liability is at least 100%.

Question 15

Is the above statement true or false?

(A) True

(B) False

Data for Question 16 (1 point)

A plan established in 1975 is amended in 1996 to extend coverage to a group of employees who have not accrued a benefit under any defined benefit plan maintained by any member in the controlled group but have been covered by a defined contribution plan throughout their employment.

Consider the following statement:

> When calculating the RPA'94 current liability for 1997, a percentage of pre-participation service for the group of employees can be disregarded.

Question 16

Is the above statement true or false?

(A) True

(B) False

1997

Data for Question 17 (1 point)

Consider the following statement:

The tax on a prohibited transaction must be paid by the disqualified persons who participate in the prohibited transaction. not by the plan.

Question 17

Is the above statement true or false?

(A) True

(B) False

1997

Data for Question 18 (1 point)

Consider the following statement:

> A $10.000 loan from a qualified plan to a married participant who is subject to qualified joint and survivor annuity requirements must have spousal consent.

Question 18

Is the above statement true or false?

(A) True

(B) False

Data for Question 19 (1 point)

Consider the following statement:

> In a distress termination, a notice of intent to terminate must be issued to all affected parties and to the PBGC.

Question 19

Is the above statement true or false?

(A) True

(B) False

1997

Data for Question 20 (1 point)

Consider the following statement:

A pension plan sponsored by one member of a controlled group satisfies the criteria for a distress termination as long as the plan sponsor has declared bankruptcy.

Question 20

Is the above statement true or false?

(A) True

(B) False

1997

Data for Question 21 (4 points)

Plan effective date: 1/1/92.

Actuarial cost method:

Before 1997: Unit credit
After 1996: Frozen initial liability

Valuation interest rate: 7%

Credit balance in funding standard account as of 12/31/96: $20,000.

Outstanding balances of all amortization bases in funding standard account for 1996 as of 1/1/97:

Initial accrued liability:	$300,000
Actuarial loss during 1993:	5,000

Selected valuation results as of 1/1/97:

Present value of future benefits	$900,000
Accrued liability, unit credit cost method	400,000
Accrued liability, entry age normal cost method	550,000
Actuarial (market) value of assets	150,000
Valuation payroll	200,000
Present value of future compensation	2,500,000

Question 21

In what range is the minimum required contribution for 1997 payable 12/31/97?

(A) Less than $45,000

(B) $45,000 but less than $48,000

(C) $48,000 but less than $51,000

(D) $51,000 but less than $54,000

(E) $54,000 or more

Data for Question 22 (4 points)

Plan effective date: 1/1/92.

Valuation interest rate: 7%

1995 funded current liability percentage: 100.0%.

1996 funded current liability percentage: 95.0%.

1996 minimum contribution as of 12/31/96: $180,000.

1996 contribution paid 9/15/97: $200,000.

Minimum required contribution for 1997 due 12/31/97: $210,000.

Contributions for 1997 plan year deposited prior to 10/15/97:

3/15/97	$50,000
6/15/97	$50,000

175% of the Federal mid-term rate for January, 1997: 10.80%.

A contribution is made on the third quarterly contribution due date for the 1997 plan year in the smallest amount required to avoid an additional interest charge with respect to such contribution.

Question 22

In what range is the contribution paid on 10/15/97?

(A) Less than $10,500

(B) $10,500 but less than $11,500

(C) $11,500 but less than $12,500

(D) $12,500 but less than $13,500

(E) $13,500 or more

Data for Question 23 (4 points)

Valuation interest rate: 7% per year.

Actuarial cost method: Unit credit.

Funding standard account credit balance as of 12/31/96: $0.

Experience loss for 1996 plan year: $50,000.

Selected valuation results as of 1/1/97:

Normal cost as of 1/1	$40,000.
Actuarial accrued liability	690,000.
Market value of assets	680,000.
Actuarial value of assets	700,000.
Current liability at end of year	800,000.
Expected benefit payments	0.

Net amortization amounts as of 1/1/97 not including amortization of 1996 loss:

IRC 412:	$3,350.
IRC 404:	10,000.

Question 23

In what range is the deductible limit for 1997?

(A) Less than $52,500

(B) $52,500 but less than $55,000

(C) $55,000 but less than $57,500

(D) $57,500 but less than $60,000

(E) $60,000 or more

Data for Question 24 (4 points)

Plan effective date: 1/1/60.

Plan termination date: 12/31/96.

Normal retirement benefit:
Effective 1/1/80: $55.00 per month for each year of service.
Effective 1/1/93: $60.00 per month for each year of service, adopted 7/1/93.
Effective 1/1/95: $70.00 per month for each year of service, adopted 7/1/93.

Early retirement age: Age 62 with 30 years of service.

Early retirement benefit: Accrued benefit payable immediately without reduction.

Data for participant Smith (not a substantial owner) as of 12/31/96:

Date of birth	1/1/35
Date of hire	1/1/65
Date of retirement	12/31/96

Year	Compensation
1992	$29,000
1993	30,000
1994	31,000
1995	32,000
1996	33,000

Maximum monthly benefit guaranteed by PBGC for 1996 under ERISA section 4022(b)(3)(A) payable at age 65 as a life annuity: $2,761.36.

Factors to adjust PBGC maximum guaranteed benefit for payments beginning before age 65:

Age:	64	63	62	61
Factor:	0.93	0.86	0.79	0.72

Question 24

In what range is Smith's PBGC guaranteed monthly benefit payable 1/1/97?

(A) Less than $1,885

(B) $1,885 but less than $1,915

(C) $1,915 but less than $1,945

(D) $1,945 but less than $1,975

(E) $1,975 or more

Data for Question 25 (4 points)

Normal retirement benefit: The sum of 1.25% of final 3-year average compensation plus X% of final 3-year average compensation in excess of covered compensation, for each year of service up to 35 years.

Normal retirement age: 62.

Earliest retirement age: 55.

Early retirement reduction: 5/9 of 1% for each month by which the benefit commencement date precedes the normal retirement date.

Normal form of payment: Life annuity with 10 years certain.

Optional form of payment: Life annuity.

Factors to convert benefit from a life annuity with 10 years certain to a life annuity:

1.05-[.003 (62 - age at commencement)]

Unadjusted permitted disparity factors in IRC regulation 1.401(l) for different Social Security Retirement Ages (SSRA):

Age	SSRA 65	SSRA 66	SSRA 67
62	.600	.550	.500
61	.550	.500	.475
60	.500	.475	.450
59	.475	.450	.425
58	.450	.425	.400
57	.425	.400	.375
56	.400	.375	.344
55	.375	.344	.316

Question 25

In what range is the maximum value of X% which will meet the requirements of IRC section 401(l)?

(A) less than .50%

(B) .50% but less than .55%

(C) .55% but less than .60%

(D) .60% but less than .65%

(E) .65% or more

Data for Question 26 (4 points)

Plan effective date: 1/1/75.

Plan termination date: 7/1/97.

Normal retirement benefit: 1.5% of 3-year average compensation times years of service.

Early retirement eligibility: Age 50.

Early retirement benefit:

Before 7/1/93: Accrued benefit, reduced by 6% for each year retirement precedes age 65.

After 6/30/93: Accrued benefit, reduced by 5% for each year retirement precedes age 65; except that the accrued benefit is unreduced for participants who have completed 30 years of service.

Data for non-owner participant Smith:

Date of birth	7/1/38
Date of hire	7/1/67
Date of retirement	7/1/97
Form of payment	Life annuity

3-year average compensation for Smith:

7/1/92	$50,000
7/1/94	53,000
7/1/97	55,000

Maximum monthly benefit guaranteed by PBGC for 1997 (payable at age 65 as a life annuity): $2,761.36.

The PBGC early retirement reduction factors are 7% per year for each of the first 5 years prior to age 65 and 4% per year for each of the next 5 years.

Question 26

In what range is the monthly benefit for Smith allocated to priority category 4 of ERISA section 4044?

(A) Less than $720

(B) $720 but less than $850

(C) $850 but less than $980

(D) $980 but less than $1,110

(E) $1,110 or more

1997

Data for Question 27 (4 points)

Consider the following descriptions of actuarial asset valuation methods:

I. 90% of the market value of assets.

II. 3-year average of the ratio of fair market value to book value of assets, multiplied by the book value of assets on the valuation date.

III. 5-year average calculated in accordance with IRS regulations, except that the result is limited to no greater than 110% of fair market value and no less than 90% of fair market value.

Question 27

Which, if any, of the above methods are valid for determining the actuarial value of assets?

(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.

Data for Question 28 (4 points)

Type of plan: Multiemployer

Actuarial cost method: Unit credit

Valuation interest rate: 7% per year

Credit balance in funding standard account as of 12/31/96: $5,000.

Selected valuation results as of 1/1/97:

Normal cost as of 1/1	$20,000
Accrued liability	500,000
Actuarial (market) value of assets	450,000

Selected valuation results projected to 12/31/97:

Current liability	$510,000
Actuarial (market) value of assets	475,000

There have always been over 100 participants in the plan.

A full funding credit due entirely to the full funding limitation prior to reflecting the 150% of current liability component was used in the funding standard account for 1996.

The contribution for 1997 is paid on 12/31/97.

Question 28

Under the fresh start alternative, in what range is the deductible limit for 1997?

(A) Less than $27,000

(B) $27,000 but less than $29,000

(C) $29,000 but less than $31,000

(D) $31,000 but less than $33,000

(E) $33,000 or more

Data for Question 29 (4 points)

Data for sponsor of two defined benefit plans:

	Highly Compensated Employees	Nonhighly Compensated Employees
Total employees	300	5,000
Employees excludable by statute	50	200
Employees benefiting under Plan A	200	2,600
Employees benefiting under Plan B	50	600

Plan A provides a yearly accrual of 2% of final average compensation. Plan B provides a yearly accrual of 1.5% of final average compensation. No employee benefits under more than one plan.

The sponsor elects to aggregate plans and not to impute permitted disparity for testing under IRC sections 401(a)(4) and 410(b).

Consider the following statements regarding minimum coverage under IRC section 410(b):

I. The ratio percentage exceeds 70%.

II. The average benefit percentage exceeds 75%.

III. The nonhighly compensated employee concentration percentage exceeds 95%.

Question 29

Which, if any, of these statements is (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.

1997

Data for Question 30 (4 points)

Plan effective date: 1/1/93.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 7% per year.

Initial accrued liability: $200,000.

Initial amount of charge base due to post-retirement mortality assumption change as of 1/1/95: $125,000.

Credit balance in funding standard account as of 12/31/96: $10,000.

Accumulated reconciliation account as of 12/31/96: $5,000.

Selected valuation results as of 1/1/97:

Present value of future benefits	$550,000
Actuarial (market) value of assets	175,000
Number of active participants	300
Present value of future working lifetime of active participants	1,500

Question 30

In what range is the minimum required contribution for 1997 payable 12/31/97?

(A) Less than $40,000

(B) $40,000 but less than $41,500

(C) $41,500 but less than $43,000

(D) $43,000 but less than $44,500

(E) $44,500 or more

Data for Question 31 (4 points)

Valuation interest rate: 8%

Current liability interest rate: 7%

Selected valuation results and funding standard account items as of 1/1:

	1/1/95	1/1/97
Actuarial (market) value of assets	$2,500,000	$3,000,000
Credit balance	200,000	150,000
Current liability	4,800,000	5,300,000
Expected increase in current liability	160,000	185,000

Expected release from current liability for the plan year with interest to 12/31/97: $375,000.

Expected disbursements for the plan year with interest to 12/31/97: $350,000.

Applicable percentage for Transition Rule: 9.00%.

Net charges and credits under IRC section 412(b) other than employer contributions and waived funding deficiencies as of 1/1/97: $229,000.

Additional funding charge under prior law: $0.

Additional funding charge under current law prior to the Transition Rule: $250,000.

Question 31

In what range is the additional funding charge calculated under the Transition (Phase-in) Rule of IRC section 412(1)(11) as of 12/31/97?

(A) Less than $80,000

(B) $80,000 but less than $120,000

(C) $120,000 but less than $160,000

(D) $160,000 but less than $200,000

(E) $200,000 or more

Data for Question 32 (4 points)

Plan effective date: 1/1/90.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 7% per year.

Outstanding balances of 412 amortization bases as of 1/1/97:

Initial accrued liability	$250,000
Plan amendment	100,000
Assumption change	50,000

Credit balance as of 1/1/97: $50,000.

Selected valuation results as of 1/1/97:

Normal cost as of 1/1	$50,000
Net 10 year amortization charge before fresh start	60,000

Employer's fiscal year: 7/1 - 6/30

The deductible limit for a given taxable year is the deductible limit determined for the plan year commencing within the taxable year.

Question 32

In what range is the deductible limit for fiscal year ending 6/30/97 calculated using the fresh start alternative?

(A) Less than $100,000

(B) $100,000 but less than $103,000

(C) $103,000 but less than $106,000

(D) $106,000 but less than $109,000

(E) $109,000 or more

Data for Question 33 (4 points)

Plan year for which PBGC premium payment is due: 1997.

Participant count as of 1/1/97: 1,000.

Valuation interest rate: 7%

PBGC required interest rate as of 1/1/97: 5.24%

The following values have been adjusted using the PBGC alternative method formula:

Adjusted values of vested benefits as of 1/1/96:

Retirees/beneficiaries receiving payments	$770,000
Terminated participants	535,000
Participants not receiving payments	4,387,000

Value of plan assets, (including 1995 receivable contribution), as of 12/31/95: $4,400,000.
Value of plan assets, (including 1996 receivable contribution), as of 12/31/96: $4,900,000.

Contribution for 1995 plan year paid 7/1/96: $300,000.
Contribution for 1996 plan year paid 7/1/97: $300,000.

Question 33

In what range is the variable portion of the PBGC premium for 1997 under the alternative calculation method?

(A) Less than $9,000

(B) $9,000 but less than $9,250

(C) $9,250 but less than $9,500

(D) $9,500 but less than $9,750

(E) $9,750 or more

Data for Question 34 (4 points)

Plan effective date: 1/1/70.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 7% per year.

Salary increases:

Before 1997: 5% per year.
After 1996: 6% per year.

Unfunded past service liability as of 1/1/76: $1.000.000.

Credit balance in funding standard account as of 12/31/96: $50.000.

Unfunded liability as of 1/1/97: $800,000.

Contribution for 1997: $150.000 paid on 7/1/97.

Credit balance in funding standard account as of 12/31/97: $75,000.

Question 34

In what range is the normal cost for 1997 as of 1 1/97?

(A) Less than $39,000

(B) $39,000 but less than $42,000

(C) $42,000 but less than $45,000

(D) $45,000 but less than $48,000

(E) $48,000 or more

1997

Data for Question 35 (4 points)

Plan effective date: 1/1/90.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 7% per year.

Credit balance in the funding standard account as of 12/31/96: $20,000.

Selected valuation results as of 1/1/97:

Normal cost as of 1/1	$120,000
Actuarial (market) value of assets	1,000,000
Unfunded liability	100,000

Increase in accrued liability as of 1/1/92 due to change in plan demographic assumptions: $50,000.

Question 35

In what range is the minimum required contribution for 1997 as of 12/31/97?

(A) Less than $114,500

(B) $114,500 but less than $116,500

(C) $116,500 but less than $118,500

(D) $118,500 but less than $120,500

(E) $120,500 or more

Data for Question 36 (4 points)

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 7% per year.

Interest rate for late quarterly contributions for 1997: 10.8% per year.

Selected valuation results:

	1/1/96	1/1/97
Normal cost as of 1/1	\$30,000	\$45,000
Net amortization charges and credits	10,000	15,000
Credit balance in funding standard account	0	0
Additional funding charge	20,000	0

Contributions for 1997 paid before 9/15/98: \$0.

Question 36

In what range is the minimum required contribution for 1997 payable 9/15/98?

(A) Less than \$68,250

(B) \$68,250 but less than \$69,250

(C) \$69,250 but less than \$70,250

(D) \$70,250 but less than \$71,250

(E) \$71,250 or more

1997

Data for Question 37 (4 points)

Type of plan: Multiemployer.

History of contribution base units for Employer A:

1985	690,000
1986	700,000
1987	700,000
1988	750,000
1989	725,000
1990	680,000
1991	250,000
1992	200,000
1993	195,000
1994	185,000
1995	150,000
1996	100,000

Withdrawal liability Employer A would have incurred for a complete withdrawal: $100,000.

Question 37

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

(A) Less than $72,000

(B) $72,000 but less than $73,000

(C) $73,000 but less than $74,000

(D) $74,000 but less than $75,000

(E) $75,000 or more

1997

Data for Question 38 (4 points)

Type of plan: Multiemployer

Normal retirement benefit:

Effective 1/1/77 (adopted 1/1/77): $12 per month for each year of service.
Effective 1/1/87 (adopted 1/1/87): $15 per month for each year of service.
Effective 1/1/92 (adopted 1/1/93): $30 per month for each year of service.

Data for all 30 participants as of 1/1/97:

Number of Participants	Years of Service
10	20
20	10

The plan became insolvent on 1/1/97. The plan has always paid at least the normal cost plus interest on the unfunded liability.

Question 38

In what range is the total amount of monthly benefits guaranteed by the PBGC as of 1/1/97?

(A) Less than $4,750

(B) $4,750 but less than $5,250

(C) $5,250 but less than $5,750

(D) $5,750 but less than $6,250

(E) $6,250 or more

1997

Data for Question 39 (4 points)

Plan effective date: 1/1/96.

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Selected valuation results:

	1/1/96	1/1/97 (After Amendment)
Normal cost as of 1/1	\$100,000	\$151,000
Accrued liability	438,000	869,000
Actuarial (market) value of Assets	0	158,000

Increase in accrued liability as of 1/1/97 due to plan amendment: \$215,000.

Contribution for 1996: \$155,000 paid on 9/30/96.

Question 39

In what range is the minimum required contribution for 1997 payable 12/31/97?

(A) Less than \$198,000

(B) \$198,000 but less than \$208,000

(C) \$208,000 but less than \$218,000

(D) \$218,000 but less than \$228,000

(E) \$228,000 or more

Data for Question 40 (4 points)

Plan effective date: 1/1/90.

Normal retirement provisions: 1.00% of highest 60-month average compensation minus .50% of final 36-month average compensation up to covered compensation, for each year of service up to 35 years. If needed, the offset portion of the benefit formula is adjusted for a participant to comply with safe harbor rules under IRC section 401(1) regulations.

Selected data for two participants:

	Smith	Brown
Date of birth	1/1/31	1/1/57
Date of hire	1/1/91	1/1/90
1996 covered compensation	\$27,000	\$62,700
Average annual compensation based on highest 60-month period	35,000	55,000
Average annual compensation based on final 36-month period	40,000	60,000

Question 40

In what range is the sum of the annual accrued benefit as of 12/31/96 for Smith and Brown?

(A) Less than \$3,000

(B) \$3,000 but less than \$3,100

(C) \$3,100 but less than \$3,200

(D) \$3,200 but less than \$3,300

(E) \$3,300 or more

1997

Data for Question 41 (4 points)

Plan effective date: 7/1/94.

Plan Year: 7/1 - 6/30.

Actuarial cost method: Projected unit credit.

Valuation interest rate: 7% per year.

Credit balance in funding standard account as of 7/1/97: $0.

Selected valuation results:

Accrued liability as of 7/1/94	$135,000
Experience gain/loss occurring between 7/1/94 - 6/30/95	0
Experience loss occurring between 7/1/95 - 6/30/96	25,000
Increase in accrued liability due to a plan amendment as of 7 1 96	7,000
Experience loss occurring between 7/1/96 - 6/30/97	85,000
Normal cost as of 7/1/97	45,000

Contribution for the plan year beginning 7/1/97: $95,000 paid on 6/30/98.

The plan has always had less than 100 participants.

Plan sponsor's tax year: 5/1 - 4/30.

The deductible limit for any tax year is based on the valuation for the plan year beginning in that tax year.

Question 41

In what range is the portion of the contribution for the plan year beginning 7/1/97 which is not deductible in the tax year ending 4/30/98?

(A) Less than $9,000

(B) $9,000 but less than $9,500

(C) $9,500 but less than $10,000

(D) $10,000 but less than $10,500

(E) $10,500 or more

1997

Data for Question 42 (4 points)

Valuation interest rate: 7.0% per year.

Current liability interest rate: 7.25% per year.

Credit balance in funding standard account as of 12/31/96: $100,000.

Selected valuation results and funding standard account items as of 1/1/97:

Normal cost as of 1/1	$150,000
Actuarial (market) value of assets	1,200,000
Amortization charges:	
Due to initial accrued liability	70,000
Due to experience gains and losses	10,000
Due to change in actuarial assumptions	10,000
OBRA'87 current liability as of 1/1	1,800,000
Expected increase in OBRA'87 current liability as of 1/1	90,000
RPA'94 current liability as of 1/1	2,100,000
Expected increase in RPA'94 current liability as of 1/1	110,000
Unfunded old liability under OBRA'87 as of 1/1 (10 years remaining)	350,000
Unfunded old liability under RPA'94 as of 1/1 (10 years remaining)	750,000

There are no expected benefit payments or disbursements.

No unpredictable contingent events have occurred.

The plan has always had 500 or more participants.

The transition rule does not apply for 1997.

The employer elected the optional rule in 1995 for purposes of computing the additional unfunded old liability.

Question 42

In what range is the additional funding charge for 1997 as of 12/31/97?

(A) Less than $30,000

(B) $30,000 but less than $45,000

(C) $45,000 but less than $60,000

(D) $60,000 but less than $75,000

(E) $75,000 or more

Data for Question 43 (4 points)

An employer sponsors a defined benefit (DB) plan and a 401(k) plan. Both plans cover all 120 employees of the employer.

Selected valuation results for DB plan as of 12/31/97:

Minimum required contribution for 1997	$415,000
Normal cost plus 10-year amortization	475,000
ERISA full funding limit	720,000
150% of current liability full funding limit	850,000
90% of current liability full funding limit	410,000
Unfunded current liability	500,000

Contributions to 401(k) plan for 1997 (paid in 1997):

Employee pre-tax elective deferrals	$50,000
Employee post-tax voluntary contributions	30,000
Employer matching contributions	10,000
Employer discretionary contributions	10,000

Total compensation, subject to Federal income tax, paid to all employees for 1997: $1,600,000.

Contribution to DB plan paid 12/31/97: $550,000.

The 401(k) plan passes the IRC sections 401(k) and 401(m) tests for 1997 without requiring a return or recharacterization of any contributions.

No contributions are returned to the employer.

Question 43

In what range are the employer's total nondeductible contributions for 1997?

(A) Less than $100,000

(B) $100,000 but less than $130,000

(C) $130,000 but less than $160,000

(D) $160,000 but less than $190,000

(E) $190,000 or more

1997

Data for Question 44 (4 points)

Plan effective date: 1/1/79.

Benefit formula: 10% of final 3-year average compensation for each year of service.

Early retirement eligibility: Age 55 with 15 years of service.

Early retirement benefit: Benefit formula actuarially reduced for commencement prior to normal retirement date.

Preretirement death benefit: None.

Interest rate specified in plan for actuarial equivalence: 6% per year.

Mortality basis specified in plan for actuarial equivalence: 1983 Group Annuity Mortality Table specified in Revenue Ruling 95-6.

Data for participant Smith:

		Year	Compensation
Date of birth	1/1/42	1994	$70,000
Date of hire	1/1/80	1995	80,000
Date of retirement	1/1/97	1996	90,000

Defined benefit dollar limitation under IRC section 415 for 1997: $125,000.

Selected commutation functions based on 1983 Group Annuity Mortality Table specified in Revenue Ruling 95-6:

	$N_x^{(12)}$	
Age	5.00%	6.00%
55	9393	5040
62	5567	2836
65	4332	2159

Question 44

In what range is the maximum annual benefit payable to Smith in 1997?

(A) Less than $53,000

(B) $53,000 but less than $55,000

(C) $55,000 but less than $57,000

(D) $57,000 but less than $59,000

(E) $59,000 or more

Data for Question 45 (4 points)

As of 12/31/97. Plan A is split into Plan B and Plan C. The plan sponsor continues to maintain both Plans B and C.

Selected valuation results as of 12/31/97:

	Plan A	Plan B	Plan C
Present value of accrued benefits on a termination basis	$230,000	$150,000	$80,000
Current liability	170,000	110,000	60,000
Accrued liability	260,000	170.000	90.000
Market value of assets	270,000		

As of 12/31/97, Plan D is split into Plan E and Plan F. The plan sponsor continues to maintain both Plans E and F.

Selected valuation results as of 12/31/97:

	Plan D	Plan E	Plan F
Present value of accrued benefits on a termination basis	$180.000	$100,000	$80,000
Current liability	140.000	78,000	62,000
Accrued liability	195.000	108.000	87,000
Market value of assets	210.000		

Question 45

In what range is the total market value of assets allocated to Plan B and Plan E as of 12/31/97?

(A) Less than $289,500

(B) $289,500 but less than $290,500

(C) $290.500 but less than $291,500

(D) $291,500 but less than $292,500

(E) $292.500 or more

Data for Question 46 (4 points)

Plan effective date: 1/1/89.

Actuarial cost method: Entry age normal.

Valuation interest rate: 7.0% per year.

Current liability interest rate for OBRA'87 and RPA'94: 7.25% per year.

Credit balance in funding standard account as of 12/31/96: $10,000.

Selected valuation results as of 1/1/97:

Normal cost as of 1/1	$30,000
Accrued liability	250,000
Actuarial (market) value of assets	170,000
OBRA'87 current liability projected to 12/31	200,000
RPA'94 current liability projected to 12/31	235,000

Expected benefit payments for 1997: $0.

There have been no experience gains or losses other than an experience gain during 1995 of $12,000.

Number of participants on each day in 1997: 175.

Question 46

In what range is the deductible limit for 1997?

(A) Less than $45,000

(B) $45,000 but less than $49,000

(C) $49,000 but less than $53,000

(D) $53,000 but less than $57,000

(E) $57,000 or more

Data for Question 47 (4 points)

Effective date of defined benefit plan: 1/1/91.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 7.0%.

Credit balance in funding standard account as of 12/31/96: $20,000.

Normal cost in defined benefit plan for 1997 as of 1/1/97: $200,000.

30 year amortization charge as of 1/1/97 for initial unfunded liability: $75,000.

Effective date of 401(k) plan: 1/1/94.

Selected data in 401(k) plan as of 12/31/97:

1997 gross compensation	$2,700,000
Employer discretionary contributions	50,000
Employee deferrals	180,000
Employer matching contributions	75,000

All employees are covered by both plans.

The contribution to the defined benefit plan for 1997 was paid on 12/31 equal to the maximum amount such that all contributions to both plans are deductible.

Question 47

In what range is the credit balance in the funding standard account as of 12/31/97?

(A) Less than $51,000

(B) $51,000 but less than $58,000

(C) $58,000 but less than $65,000

(D) $65,000 but less than $72,000

(E) $72,000 or more

Data for Question 48 (4 points)

Participant data for 1996:

	Smith	Brown	Total of 25 others	Total
Present value of accrued vested benefits at 1/1/96	$750,000	$80,000	$500,000	$1,330,000
Present value of accrued non-vested benefits at 1/1/96	0	20,000	200,000	220,000
Present value of accrued vested benefits at 12/31/96	900,000	250,000	750,000	1,900,000
Present value of accrued non-vested benefits at 12/31/96	0	0	450,000	450,000

There are no retirees or terminated vested participants as of 12/31/96.

Smith and Brown are the only key employees of the corporation.

The valuation date for 1996 and 1997 is 1/1.

There was a distribution of $165,000 on 1/5/96 payable to a non-key employee who terminated employment on 12/31/91. No other persons have received benefits from the plan.

Question 48

In what range is the fraction used to determine top-heavy status for 1997?

(A) Less than 45%

(B) 45% but less than 50%

(C) 50% but less than 55%

(D) 55% but less than 60%

(E) 60% or more

Data for Question 49 (4 points)

Plan effective date: 1/1/97.

Normal retirement benefit: $650 per year times years of service.

Death benefit: Present value of accrued benefit.

Actuarial cost method: Individual aggregate.

Valuation interest rate: 7%

Mortality table: 1983 GAM unisex, post-retirement only.

Data for sole participant Smith:

Date of birth	1/1/57
Date of hire	1/1/82
Normal retirement date	1/1/2002

Tax status of Smith: Self-employed

Gross 1997 earned income (after all deductions other than plan contributions) for Smith: $30,000.

Smith's earned income for each prior year was $8,500.

Selected annuity values:

$$a_{45}^{(12)} = 13.52$$

$$a_{55}^{(12)} = 12.26$$

$$a_{62}^{(12)} = 10.99$$

Defined benefit dollar limitation under IRC section 415 for 1997: $125,000.

Question 49

In what range is the minimum required contribution for 1997 payable 12/31/97?

(A) Less than $20,000

(B) $20,000 but less than $23,000

(C) $23,000 but less than $26,000

(D) $26,000 but less than $29,000

(E) $29,000 or more

Data for Question 50 (4 points)

Consider the following statements regarding the determination of PBGC premiums:

I. A participant with a qualified domestic relations order is counted as only one participant.

II. If the plan has a variable rate premium, the plan sponsor must issue a notice regarding the plan's funding status and the limits on the PBGC's guarantee to all plan participants.

III. For a short plan year, at the time of payment the filer may prorate the full annual premium.

Question 50

Which, if any, of these statements is (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.

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ANSWER KEY

1.	A	26.	B
2.	B	27.	E
3.	A	28.	B
4.	B	29.	E
5.	A	30.	D
6.	B	31.	C
7.	B	32.	A
8.	A	33.	D
9.	B	34.	C
10.	B	35.	E
11.	A	36.	B
12.	B	37.	E
13.	B	38.	B
14.	A	39.	C
15.	A	40.	D
16.	A	41.	A
17.	A	42.	D
18.	A	43.	B
19.	A	44.	A
20.	B	45.	B
21.	C	46.	D
22.	D	47.	B
23.	B	48.	C
24.	B	49.	C
25.	A	50.	E

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