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AMERICAN SOCIETY OF PENSION ACTUARIES

JOINT BOARD FOR THE ENROLLMENT OF ACTUARIES

COURSE P-365U (EA2)

JOINT BOARD BASIC EXAMINATION

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1992

Data for Question 1

Consider the following statements regarding reasonable funding methods and the inclusion of persons in an actuarial valuation:

I. All nonvested terminated employees must be excluded.

II. All current plan participants must be included.

III. Current employees who are not yet eligible to participate must be excluded.

Question 1

Which, if any, of these 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.

1992

Data for Question 2

Plan effective date: 1/1/91.

Actuarial cost method: Unit credit.

Valuation interest rate: 8% per year.

Normal cost for 1991 as of 1/1/91: $40,000.

Accrued liability as of 1/1/91: $300,000.

Unfunded accrued liability as of 1/1/92:

Before mortality assumption change: $290,000.
After mortality assumption change: 315,000.

The contributions for 1991 and 1992 were paid on 12/31/91 and 12/31/92 in amounts equal to the deductible limits for 1991 and 1992.

Question 2

In what range is the credit balance in the funding standard account as of 12/31/92?

(A) Less than $37,000

(B) $37,000 but less than $38,000

(C) $38,000 but less than $39,000

(D) $39,000 but less than $40,000

(E) $40,000 or more

1992

Data for Question 3

Plan termination date: 12/31/92.

Normal retirement benefit:

Effective 1/1/76:	$80 per month for each year of service, payable as a life annuity.
Effective 7/1/89:	$95 per month for each year of service, payable as a life annuity with five years certain.

Data for participant Smith:

Date of birth	1/1/34
Date of hire	1/1/68

Smith is not a substantial owner.

PBGC actuarial equivalence factor for converting a life annuity into a life annuity with five years certain: 97.5%.

Maximum monthly benefit guaranteed by the PBGC for 1992: $2,352.27.

Question 3

In what range is the monthly normal retirement benefit guaranteed for Smith by the PBGC (payable as a life annuity with five years certain)?

(A) Less than $2,110

(B) $2,110 but less than $2,160

(C) $2,160 but less than $2,210

(D) $2,210 but less than $2,260

(E) $2,260 or more

1992

Data for Question 4

Plan effective date: 1/1/91.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 8% per year.

Selected valuation results:

	1/1/91	1/1/92
Normal cost as of 1/1	$ 51,000	$55,000
Unfunded liability	200,000	
175% of applicable mid-term federal rate	14.42%	11.93%

The plan sponsor paid the minimum required contribution for 1991 on 12/31/91 and paid the minimum required contribution for 1992 on 1/31/93.

Question 4

In what range is the additional interest charge in the funding standard account for 1992 due to the nonpayment of minimum required quarterly contributions for 1992?

(A) Less than $1,375

(B) $1,375 but less than $1,475

(C) $1,475 but less than $1,575

(D) $1,575 but less than $1,675

(E) $1,675 or more

1992

Data for Question 5

Consider the following benefit formulas:

I. 1.00% of compensation for each of the first 10 years of service, plus 1.50% of compensation for each of the next 10 years of service.

II. 1.00% of compensation for each of the first 15 years of service, plus 1.50% of compensation for each of the next 15 years of service.

III. 0.75% of compensation for each of the first 20 years of service, plus 1.00% of compensation for each of the next 20 years of service.

Question 5

Which, if any, of these benefit formulas comply with at least one of ERISA's accrued benefit rules?

(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.

1992

Data for Question 6

Actuarial cost method: Aggregate.

Valuation interest rate: 8% per year.

Funding deficiency in funding standard account as of 12/31/90: $3,000.

Selected valuation results as of 1/1/91:

Present value of future benefits	$250,000
Actuarial value of assets	100,000
Market value of assets	90,000
Present value of future compensation	750,000
Annual compensation	200,000

Outstanding balance in funding standard account for waiver of 1984 contribution (amortized over 15 years) as of 1/1/91: $10,000.

Required interest rate for 1985 through 1992 for amortizing waived contributions: 8% per year.

Contribution for 1991: $32,000 paid on 12/31/91.

The normal cost for 1992 is equal to the normal cost for 1991.

Question 6

In what range is the minimum required contribution for 1992 payable 12/31/92?

(A) Less than $40,000

(B) $40,000 but less than $44,000

(C) $44,000 but less than $48,000

(D) $48,000 but less than $52,000

(E) $52,000 or more

1992

Data for Question 7

Valuation interest rate: 7% per year.

Current liability interest rate: 8% per year.

Selected funding standard account items as of 1/1/92:

Deficit reduction contribution	\$ 80,000
Net amortization charge for certain bases	15,000
Unpredictable contingent event amount	18,000
Assets needed to increase current liability percentage to 100%	200,000

There were 145 participants on each day of 1991.

Question 7

In what range is the additional funding charge in the funding standard account as of 12/31/92?

(A) Less than \$80,000

(B) \$80,000 but less than \$83,000

(C) \$83,000 but less than \$86,000

(D) \$86,000 but less than \$89,000

(E) \$89,000 or more

1992

Data for Question 8

Plan effective date: 1/1/91.

Actuarial cost method: Entry age normal.

Valuation interest rate: 8% per year.

Selected valuation results:

	1/1/91	1/1/92
Normal cost as of 1/1	$ 20,000	$ 25,000
Accrued liability	125,000	150,000

Contribution for 1991: $22,500 paid on 12/31/91.

Benefit payments for 1991: $0.

Question 8

In what range is the maximum deductible contribution for 1992 payable 12/31/92?

(A) Less than $44,500

(B) $44,500 but less than $45,500

(C) $45,500 but less than $46,500

(D) $46,500 but less than $47,500

(E) $47,500 or more

1992

Data for Question 9

Type of plan: Multiemployer.

Plan effective date: 1/1/70.

Normal retirement benefit:

Effective 1/1/70: $10 per month for each year of service.
Effective 1/1/80: $15 per month for each year of service.
Effective 1/1/90: $21 per month for each year of service.

Data for all participants as of 1/1/92:

Number of Participants	Age	Years of Service
10	50	25
20	30	10

The plan became insolvent on 1/1/92. The plan has always paid at least the normal cost plus interest on the unfunded liability.

Question 9

In what range is the total amount of monthly benefits guaranteed by the PBGC as of 1/1/92?

(A) Less than $5,000

(B) $5,000 but less than $6,000

(C) $6,000 but less than $7,000

(D) $7,000 but less than $8,000

(E) $8,000 or more

1992

Data for Question 10

Plan effective date: 1/1/82.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 8% per year.

Credit balance in funding standard account as of 12/31/91: $8,000.

Amortization charge in funding standard account as of 1/1/92 for initial accrued liability: $16,000.

Selected valuation results as of 1/1/92:

Normal cost as of 1/1	$ 25,000
Actuarial (market) value of assets	130,000
Normal cost under entry age normal method as of 1/1	20,000
Accrued liability under entry age normal method	150,000
Current liability projected to 12/31	120,000
Actuarial (market) value of assets projected to 12/31	140,000

Contribution carryover from 1991: $4,000.

The contribution for 1992 was paid on 12/31/92 in an amount equal to the deductible limit for 1992 minus the contribution carryover from 1991.

Question 10

In what range is the credit balance in the funding standard account as of 12/31/92?

(A) Less than $3,500

(B) $3,500 but less than $4,500

(C) $4,500 but less than $5,500

(D) $5,500 but less than $6,500

(E) $6,500 or more

1992

Data for Question 11

Plan effective date: 1/1/90.

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Selected valuation results and funding standard account items:

	1/1/91	1/1/92
Normal cost as of 1/1	$100,000	$100,000
Accrued liability	100,000	230,000
Actuarial (market) value of assets	120,000	210,000
Full funding limitation based on 150% of current liability projected to 12/31	72,705	135,000
Credit balance	0	
Net amortization charges	0	

Contributions for 1991 with interest to 12/31/91: $85,000.

Question 11

In what range is the minimum required contribution for 1992 payable 12/31/92?

(A) Less than $100,000

(B) $100,000 but less than $101,000

(C) $101,000 but less than $102,000

(D) $102,000 but less than $103,000

(E) $103,000 or more

1992

Data for Question 12

Plan effective date: 1/1/92.

Normal retirement benefit: $150 per month for each year of service, reduced by the accrued benefit deemed to be provided from the employer's prior profit-sharing plan.

Data and selected valuation results for participant Smith as of 1/1/92:

Date of birth 1/1/36
Date of hire 1/1/86
Annual compensation:

1986	$ 6,000
1987	7,000
1988	4,000
1989	11,000
1990	9,000
1991	3,000

Annual accrued benefit from prior profit-sharing plan: $800
Defined contribution fraction from prior profit-sharing plan: .25

Defined benefit dollar limitation under IRC section 415 for 1992: $112,221.

Benefits from the defined benefit plan will be reduced first if benefits and contributions would otherwise be more than permitted by IRC section 415.

Question 12

In what range is Smith's annual accrued benefit under the defined benefit plan as of 1/1/92?

(A) Less than $2,500

(B) $2,500 but less than $5,000

(C) $5,000 but less than $7,500

(D) $7,500 but less than $10,000

(E) $10,000 or more

1992

Data for Question 13

Valuation interest rate: 8% per year.

Credit balance in funding standard account as of 12/31/90: $0.

Minimum required contribution for 1991 payable 12/31/91: $190,000.

Contribution for 1991: $280,000 paid on 12/31/91.

Minimum required contribution for 1992 payable 1/1/92: $110,000.

The first contribution for 1992 is paid on 10/15/92. The amount of the contribution is equal to the smallest amount required to avoid an additional interest charge with respect to such contribution.

175% of applicable mid-term federal rate for January, 1992: 11.93%.

Question 13

In what range is the contribution paid on 10/15/92?

(A) Less than $35,000

(B) $35,000 but less than $40,000

(C) $40,000 but less than $45,000

(D) $45,000 but less than $50,000

(E) $50,000 or more

1992

Data for Question 14

Type of plan: Multiemployer.

Plan effective date: 1/1/84.

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

History of contribution base units:

Year	Contribution Base Units for Employer A	Present Value of Unfunded Vested Benefits as of 12/31 Allocated to Employer A
1984	900,000	$950,000
1985	900,000	900,000
1986	1,300,000	800,000
1987	1,200,000	700,000
1988	600,000	650,000
1989	350,000	550,000
1990	300,000	550,000
1991	300,000	400,000
1992	250,000	350,000

Employer A experienced a partial withdrawal liability in 1991 due to a 70% decline in contribution base units. No other employers have withdrawn from the plan.

Question 14

In what range is Employer A's partial withdrawal liability as of 1/1/92?

(A) Less than $400,000

(B) $400,000 but less than $430,000

(C) $430,000 but less than $460,000

(D) $460,000 but less than $490,000

(E) $490,000 or more

1992

Data for Question 15

Plan effective date: 1/1/87.

Actuarial cost method: Individual level premium.

Actuarial assumptions:

Valuation interest rate: 8% per year.
Current liability interest rate: 8% per year.
Compensation increases: None.
Preretirement deaths and terminations: None.
Retirement age: 62.

Date of birth for sole participant: 1/1/45.

Credit balance in funding standard account as of 12/31/91: $0.

Selected valuation results as of 1/1/92:

Normal cost as of 1/1	$ 8,000
Present value of future benefits	100,000
Actuarial value of assets	23,000
Market value of assets	22,000
Current liability projected to 12/31	22,800

There were no experience gains or losses before 1991.

Question 15

In what range is the maximum deductible contribution for 1992 payable 12/31/92?

(A) Less than $9,000

(B) $9,000 but less than $9,200

(C) $9,200 but less than $9,400

(D) $9,400 but less than $9,600

(E) $9,600 or more

1992

Data for Question 16

Plan effective date: 1/1/85.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 8% per year.

Initial accrued liability: $1,000,000.

Credit balance in funding standard account as of 12/31/90: $5,000.

Normal cost for 1991 as of 1/1/91: $100,000.

Contribution for 1991: $193,000 paid on 4/15/91.

Normal cost for 1992 as of 1/1/92: $110,000.

The minimum required quarterly contribution payable 4/15/92 was paid on 4/15/92.

Question 16

In what range is the minimum required quarterly contribution payable 7/15/92?

(A) Less than $41,500

(B) $41,500 but less than $43,500

(C) $43,500 but less than $45,500

(D) $45,500 but less than $47,500

(E) $47,500 or more

1992

Data for Question 17

Plan effective date: 1/1/91.

Actuarial cost method:

Before 1992: Frozen initial liability.
After 1991: Aggregate.

Valuation interest rate: 8% per year.

Selected valuation results:

	1/1/91	1/1/92
Present value of future benefits	$1,200,000	$1,300,000
Present value of future compensation	8,000,000	8,500,000
Annual compensation	400,000	450,000
Normal cost under entry age normal method as of 1/1	33,500	44,500
Accrued liability under entry age normal method	530,000	600,000

Contribution for 1991: $95,000 paid on 12/31/91.

Benefit payments for 1991: $0.

Question 17

In what range is the minimum required contribution for 1992 payable as of the beginning of the year (1/1/92)?

(A) Less than $49,500

(B) $49,500 but less than $52,500

(C) $52,500 but less than $55,500

(D) $55,500 but less than $58,500

(E) $58,500 or more

1992

Data for Question 18

Plan effective date: 1/1/80.

Actuarial cost method: Individual aggregate.

Valuation interest rate: 8% per year.

Credit balance in funding standard account as of 12/31/91: $4,000.

Data for sole proprietor and only participant:

Date of birth	1/1/28
Earned income after all deductions other than plan contributions	$10,000

Selected valuation results as of 1/1/92:

Present value of future benefits	$500,000
Actuarial (market) value of assets	450,000

Credit due to full funding limitation for 1991 based on 150% of current liability: $30,000.

Contribution for 1992: $60,000 paid on 12/31/92.

Question 18

In what range is the penalty on nondeductible contributions for 1992?

(A) Less than $1,000

(B) $1,000 but less than $3,000

(C) $3,000 but less than $5,000

(D) $5,000 but less than $7,000

(E) $7,000 or more

1992

Data for Question 19

Consider the following individuals who perform services for a pension plan:

I. The investment manager.

II. The enrolled actuary.

III. The administrator named in the plan document.

Question 19

Which, if any, of the above individuals are always considered to be fiduciaries under ERISA?

(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.

1992

Data for Question 20

Plan effective date: 1/1/87.

Plan termination date: 12/31/92.

Date of distribution of assets: 12/31/92.

Normal retirement benefit:

Effective 1/1/87: \$65 per month for each year of service.
Effective 1/1/90: \$100 per month for each year of service.

Early retirement benefit: None.

Market value of assets of 12/31/92: \$75,000.

Data for only participants as of 12/31/92:

	Smith	Brown
Date of birth	1/1/34	1/1/38
Date of hire	1/1/87	1/1/88
Vested status	100%	80%
Marital status	Single	Single
Ownership	80%	None

Selected annuity values on a termination basis:

$${}_{6|}\ddot{a}_{59}^{(12)} = 7.3 \qquad {}_{10|}\ddot{a}_{55}^{(12)} = 5.4$$

Question 20

In what range are the assets allocated to Brown under ERISA section 4044?

(A) Less than \$25,000

(B) \$25,000 but less than \$27,000

(C) \$27,000 but less than \$29,000

(D) \$29,000 but less than \$31,000

(E) \$31,000 or more

1992

Data for Question 21

Plan effective date: 1/1/92.

Plan year: Calendar year.

Plan sponsor's taxable year: 7/1 - 6/30.

Actuarial cost method: Frozen initial liability (level dollar amount).

Valuation interest rate: 7% per year.

Assumed retirement age: 65.

Selected valuation results as of 1/1/92:

Present value of future benefits	$800,000
Unfunded liability	300,000
Number of participants below age 65	200
Present value of future working lifetime of active participants	1,600

The deductible limit for any taxable year is based upon the plan year beginning in that taxable year.

The contribution for the 1992 plan year was paid on 4/1/92 in an amount equal to the deductible limit for the taxable year ending 6/30/92.

Question 21

In what range is the credit balance in the funding standard account as of 12/31/92?

(A) Less than $19,000

(B) $19,000 but less than $21,000

(C) $21,000 but less than $23,000

(D) $23,000 but less than $25,000

(E) $25,000 or more

1992

Data for Question 22

Plan effective date: 1/1/85.

Normal retirement benefit: 3% of each year's compensation.

Mandatory employee contributions: 4.5% of compensation, paid on 12/31.

Vesting eligibility: Full and immediate.

Basis for actuarial equivalence: 1971 Individual Annuity Mortality Table (for postretirement mortality only) and PBGC interest rates used for determining lump sum distribution amounts on a termination basis.

Data for participant Smith:

Date of birth	1/1/30
Date of hire	1/1/89
Date of termination	1/1/92

Annual compensation:

1989	$40,000
1990	50,000
1991	60,000

120% of mid-term applicable federal rate for:

January, 1989: 11.11%. January, 1991: 9.78%.
January, 1990: 9.57%. January, 1992: 8.10%.

PBGC immediate interest rate as of 1/1/92: 6.50%.

PBGC first-tier deferred (kl) interest rate as of 1/1/92: 5.75%.

Selected annuity values based on the 1971 Individual Annuity Mortality Table:

	5.00%	6.50%	8.10%
$\ddot{a}_{65}^{(12)}$	10.9	9.0	8.0

Question 22

In what range is Smith's annual accrued benefit as of 1/1/92 derived from employer contributions?

(A) Less than $3,450

(B) $3,450 but less than $3,550

(C) $3,550 but less than $3;650

(D) $3,650 but less than $3,750

(E) $3,750 or more

1992

Data for Question 23

Plan effective date: 1/1/70.

Actuarial cost method: Entry age normal.

Valuation interest rate: 8% per year.

Selected valuation results as of 1/1/92:

Normal cost as of 1/1	\$ 35,000
Unfunded accrued liability	370,000

Outstanding balances of amortization bases in funding standard account as of 1/1/92:

Initial unfunded accrued liability from 1/1/76	\$300,000
Increase in liability due to a plan amendment from 1/1/85	90,000
Waiver of 1986 contribution (amortized over 15 years)	45,000
Experience gain during 1991	20,000

Required interest rate for 1987 through 1992 for amortizing waived contributions: 8% per year.

There were no experience gains or losses before 1991.

Question 23

In what range is the minimum required contribution for 1992 payable 12/31/92?

(A) Less than \$29,000

(B) \$29,000 but less than \$33,000

(C) \$33,000 but less than \$37,000

(D) \$37,000 but less than \$41,000

(E) \$41,000 or more

1992

Data for Question 24

Eligibility for participation: Age 21 and one year of service.

Consider the following statements regarding the determination of maximum benefits under IRC section 415:

I. The $10,000 de minimis limitation is reduced for less than 10 years of service.

II. The compensation limitation is reduced for less than 10 years of service.

III. The dollar limitation is adjusted for retirement both prior to and subsequent to Social Security retirement age.

IV. The maximum benefit is not reduced if a benefit is paid in the form of a qualified joint and survivor annuity.

Question 24

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

(A) All but I

(B) All but II

(C) All but III

(D) All but IV

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

1992

Data for Question 25

Plan effective date: 1/1/84.

Plan termination date: 12/31/92.

Normal retirement benefit:

Effective 1/1/84: $18 per month for each year of service.
Effective 4/1/87: $30 per month for each year of service.
Effective 7/1/89: $35 per month for each year of service.

Early retirement benefit: None.

Vesting eligibility: Full and immediate.

Participant data as of 12/31/92:

	Smith	Brown
Date of birth	1/1/40	1/1/45
Date of hire	1/1/84	1/1/82
Ownership	50%	5%
Status	Active	Active

Question 25

In what range is the sum of the monthly normal retirement benefits guaranteed for Smith and Brown by the PBGC?

(A) Less than $437

(B) $437 but less than $457

(C) $457 but less than $477

(D) $477 but less than $497

(E) $497 or more

1992

Data for Question 26

Plan effective date: 1/1/91.

Actuarial cost method: Entry age normal.

Valuation interest rate: 8% per year.

Initial accrued liability: $900,000.

Experience loss in 1991: $10,000.

Credit balance in funding standard account as of 12/31/91: $70,000.

Normal cost for 1992 as of 1/1/92: $80,000.

Unfunded current liability as of 12/31/92: $225,000.

Number of active participants on each day of plan year:

1991	140
1992	160

The contribution for 1992 was paid on 7/1/92 in an amount equal to the deductible limit for 1992.

Question 26

In what range is the credit balance in the funding standard account as of 12/31/92?

(A) Less than $110,000

(B) $110,000 but less than $120,000

(C) $120,000 but less than $130,000

(D) $130,000 but less than $140,000

(E) $140,000 or more

1992

Data for Question 27

Normal retirement benefit: 2% of final 5-year average compensation for each year of service up to 10 years.

Actuarial assumptions:

Valuation interest rate: 8% per year.
Current liability interest rate: 9% per year.
Preretirement deaths and terminations: None.
Retirement age: 65.

Value of invested assets as of 12/31/91: $100,000.

Contribution for 1991: $50,000 paid on 6/30/92.

Data for only participants (all active) as of 12/31/91:

Number of participants	50
Date of birth	1/1/55
Date of hire	1/1/85
5-year average annual compensation for each participant	$24,000

Required interest rate for January, 1992: 6.16%.

PBGC variable rate: $9 per $1,000 of unfunded vested liability.

The PBGC premium for 1992 is determined under the general rule and is paid on 9/15/92; the plan sponsor has elected to reflect contributions receivable in determining the variable rate portion of the premium.

Selected annuity values:

	6.16%	8.0%	9.0%
$\ddot{a}_{65}^{(12)}$	10.3	9.1	8.5

Question 27

In what range is the variable rate portion of the PBGC premium for 1992?

(A) Less than $390

(B) $390 but less than $790

(C) $790 but less than $1,190

(D) $1,190 but less than $1,590

(E) $1,590 or more

1992

Data for Question 28

Plan effective date: 1/1/87.

Actuarial cost method:

Before 1992: Unit credit.
After 1991: Entry age normal.

Valuation interest rate: 8% per year.

Initial accrued liability: $280,000.

Increase in accrued liability due to plan amendment as of 1/1/89: $40,000.

Credit balance in funding standard account as of 12/31/91: $2,500.

Selected valuation results (under entry age normal method) as of 1/1/92:

Normal cost as of 1/1	$ 50,000
Unfunded accrued liability	320,000

There have been no experience gains or losses other than an experience gain of $4,000 during 1990.

Question 28

In what range is the amortization charge in the funding standard account as of 1/1/92 resulting from the change in actuarial cost method?

(A) Less than $1,750

(B) $1,750 but less than $1,850

(C) $1,850 but less than $1,950

(D) $1,950 but less than $2,050

(E) $2,050 or more

Data for Question 29

Plan effective date: 1/1/76.

Selected valuation results as of 1/1/91 for all participants as of 12/31/91:

	Smith	Brown	Green	Totals for Remaining 20 Employees (Each Non-Key)	Total
Present value of vested accrued benefits	$250,000	$ 50,000	$ 30,000	$300,000	$630,000
Present value of nonvested accrued benefits	20,000	10,000	10,000	200,000	240,000
Annual compensation	200,000	180,000	50,000	350,000	780,000

Smith, Brown, and Green are the only officers of the company. Smith is a 99% owner, and Brown is a 1% owner.

White, a 20% owner when he terminated on 8/1/87, received a lump sum payment of $150,000 on 5/1/88. There were no other distributions.

There are no retirees or other terminated vested participants.

Defined benefit dollar limitation under IRC section 415 for 1992: $112,221.

Question 29

In what range is the fraction used to determine the plan's top-heavy status for 1992?

(A) Less than 38%

(B) 38% but less than 42%

(C) 42% but less than 46%

(D) 46% but less than 50%

(E) 50% or more

1992

Data for Question 30

Consider the following statements regarding the determination of PBGC premiums:

I. In determining a plan's variable rate premium, the unfunded vested portion of the current liability is based on the plan's actuarial value of assets without a reduction for any credit balance in the funding standard account.

II. In determining a plan's variable rate premium under the general rule, the plan provisions used to determine the vested portion of a plan's current liability are those in effect as of the last day of the plan year preceding the premium payment year.

III. In determining a plan's variable rate premium under the alternative calculation method, plan amendments must be recognized when those amendments result in an increase in the sum of the normal cost and net amortization charges of 3% or more.

Question 30

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.

1992

Data for Question 31

Plan effective date: 1/1/90.

Actuarial cost method: Entry age normal.

Valuation interest rate: 8% per year (for purposes of both regular and alternative minimum funding standard account).

Selected valuation results:

	1/1/90	1/1/91
Normal cost as of 1/1	$60,000	$80,000
Accrued liability	0	95,000
Actuarial value of assets	0	75,000
Market value of assets	0	85,000
Unit credit normal cost on a termination basis	0	70,000
Present value of accrued benefits on a termination basis	0	80,000

Contribution for 1990: $60,000 paid on 1/1/90.

Contribution for 1991: $70,000 paid on 12/31/91.

Normal cost for 1992 as of 1/1/92: $85,000.

The alternative minimum funding standard account was used for 1991 only.

There were no experience gains or losses in 1991.

Question 31

In what range is the minimum required contribution for 1992 payable 12/31/92?

(A) Less than $99,000

(B) $99,000 but less than $101,000

(C) $101,000 but less than $103,000

(D) $103,000 but less than $105,000

(E) $105,000 or more

1992

Data for Question 32

Plan effective date: 1/1/78.

Plan termination date: 1/1/92.

Normal retirement benefit:

Effective 1/1/78: 30% of final 3-year average annual compensation.
Effective 7/1/91: 40% of final 3-year average annual compensation.

Accrued benefit: Fractional rule based on service.

Early retirement eligibility: Age 60 with 20 years of service.

Early retirement benefit: Accrued benefit reduced by 5% for each year by which the benefit commencement date precedes the normal retirement date.

Participant data:

	Smith	Brown
Date of birth	1/1/29	1/1/28
Date of hire	1/1/70	1/1/65
Date of retirement	1/1/90	1/1/90
Annual compensation:		
1986	$24,000	$29,000
1987	25,000	30,000
1988	26,000	31,000
1989	27,000	32,000

Question 32

In what range is the sum of the monthly benefits for Smith and Brown allocated to priority category 3 of ERISA section 4044?

(A) Less than $525

(B) $525 but less than $650

(C) $650 but less than $775

(D) $775 but less than $900

(E) $900 or more

1992

Data for Question 33

Plan effective date: 1/1/90.

Actuarial cost method: Projected unit credit.

Valuation interest rate: 8% per year.

Experience loss during 1990: $50,000.

Experience loss during 1991: $40,000.

Normal cost for 1991 as of 1/1/91: $50,000.

Normal cost for 1992 as of 1/1/92: $40,000.

Outstanding balance of initial accrued liability in funding standard account as of 1/1/91: $100,000.

Credit balance in funding standard account as of 12/31/91 and 12/31/92: $0.

Contributions for 1992: $16,000 paid on 3/31/92, $32,000 paid on 6/30/92, and a final payment on 12/31/92.

Interest rate for late quarterly contributions as of 1/1/92: 11.93%.

Question 33

In what range was the final payment for 1992?

(A) Less than $22,000

(B) $22,000 but less than $23,000

(C) $23,000 but less than $24,000

(D) $24,000 but less than $25,000

(E) $25,000 or more

1992

Data for Question 34

Defined benefit plan provisions:

Effective date: 1/1/85.
Normal retirement benefit: 100% of final 3-year average compensation.

Data for participant Smith:

Date of birth	1/1/27
Date of hire	1/1/82
Date of retirement	1/1/92

Annual compensation:

1989	$120,000
1990	140,000
1991	160,000

Defined contribution fraction for Smith as of 12/31/91: 0.40

Defined benefit dollar limitation under IRC section 415 for 1992: $112,221.

Benefits from the defined benefit plan will be reduced first if benefits and contributions would otherwise be more than permitted by IRC section 415.

Question 34

In what range is the maximum annual benefit payable to Smith from the defined benefit plan in 1992?

(A) Less than $57,500

(B) $57,500 but less than $65,000

(C) $65,000 but less than $72,500

(D) $72,500 but less than $80,000

(E) $80,000 or more

1992

Data for Question 35

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 8% per year.

Current liability interest rate: 9% per year.

Selected valuation results and funding standard account items as of 1/1/92:

Current liability	$2,500,000
Actuarial value of assets	2,000,000
Market value of assets	2,050,000
Credit balance	60,000
Amortization charge for initial accrued liability	40,000
Outstanding balance of unfunded old liability	400,000
Unfunded old liability amount	45,526

There were 145 participants on each day in 1991.

There are no unpredictable contingent events.

Question 35

In what range is the additional funding charge for 1992 as of 12/31/92?

(A) Less than $27,500

(B) $27,500 but less than $31,500

(C) $31,500 but less than $35,500

(D) $35,500 but less than $39,500

(E) $39,500 or more

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ANSWER KEY

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