SOCIETY OF ACTUARIES

AMERICAN SOCIETY OF PENSION ACTUARIES

JOINT BOARD FOR THE ENROLLMENT OF ACTUARIES

COURSE P-365U (EA2)

JOINT BOARD BASIC EXAMINATION

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1993

Data for Question 1

Plan effective date: 1/1/92.

Normal retirement benefit:

Effective 1/1/92: $20 per month for each year of service.
Effective 1/1/93: $40 per month for each year of service.

Actuarial cost method: Entry age normal.

Valuation interest rate: 8% per year.

Selected valuation results:

	1/1/92 ($20)	1/1/93 ($40)
Normal cost as of 1/1	$ 30,000	$ 65,000
Accrued liability	220,000	600,000

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

There are no retired or terminated vested participants.

Question 1

In what range is the minimum required contribution for 1993 payable 12/31/93?

(A) Less than $115,000

(B) $115,000 but less than $120,000

(C) $120,000 but less than $125,000

(D) $125,000 but less than $130,000

(E) $130,000 or more

1993

Data for Question 2

Actuarial cost method: Entry age normal.

Valuation interest rate: 8% per year.

Required interest rate for all years for amortizing waived contributions: 14% per year.

The minimum funding requirement for 1993 of $43,200 as of 12/31/93 was fully waived.

Question 2

In what range is the reconciliation amount as of 1/1/97 due to the funding waiver?

(A) Less than $6,700

(B) $6,700 but less than $7,200

(C) $7,200 but less than $7,700

(D) $7,700 but less than $8,200

(E) $8,200 or more

1993

Data for Question 3

Type of plan: Contributory.

Plan effective date: 1/1/82.

Plan termination date: 12/31/92.

Date of distribution of assets: 12/31/93.

The plan provides for a reversion of residual assets to the plan sponsor upon plan termination.

Smith, Brown, and Green are the only participants ever covered under the plan.

Total lump sum distribution paid to Smith on 6/30/90:

Return of mandatory employee contributions	$15,000
Interest on mandatory employee contributions	5,000
Present value of employer-provided benefit	20,000
Total	40,000

Market value of assets as of 12/31/92: $250,000.

Market value of assets as of 12/31/93: $300,000.

Present value of accrued benefits on a termination basis:

ERISA Section 4044	12/31/92		12/31/93	
Priority Category	Brown	Green	Brown	Green
1	$ 15,000	$ 0	$ 20,000	$ 0
2	25,000	20,000	30,000	25,000
3-6	85,000	55,000	100,000	75,000
Total	125,000	75,000	150,000	100,000

Brown and Green each will receive a lump sum distribution equal to the present value of his/her total benefit on a termination basis.

Question 3

In what range is the reversion to the plan sponsor before excise taxes?

(A) Less than $35,750

(B) $35,750 but less than $36,500

(C) $36,500 but less than $37,250

(D) $37,250 but less than $38,000

(E) $38,000 or more

1993

Data for Question 4

Plan effective date: 1/1/92.

Plan year: Calendar year.

Plan sponsor's taxable year: 2/1 - 1/31.

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

Actuarial cost method: Entry age normal.

Valuation interest rate: 8% per year.

Initial accrued liability: $800,000.

Experience loss during 1992: $75,000.

Full funding credit for 1992 (due entirely to 150% of current liability full funding limitation): $100,000.

Credit balance in funding standard account as of 12/31/92: $25,000.

Normal cost for 1993 as of 1/1/93: $60,000.

The contribution for the 1993 plan year was paid on 7/1/93 in an amount equal to the deductible limit for the taxable year ending 1/31/93.

Question 4

In what range is the credit balance in the funding standard account as of 12/31/93?

(A) Less than $40,000

(B) $40,000 but less than $46,000

(C) $46,000 but less than $52,000

(D) $52,000 but less than $58,000

(E) $58,000 or more

1993

Data for Question 5

Plan effective date: 1/1/89.

Normal retirement benefit: 50% of final 5-year average compensation.

Actuarial cost method: Frozen initial liability.

Asset valuation method: Market value.

Valuation interest rate: 8% per year.

Initial accrued liability: $200,000.

Full funding credit for 1992 (due entirely to 150% of current liability full funding limitation): $25,000.

Credit balance in funding standard account as of 12/31/92: $10,000.

Selected valuation results as of 1/1/93:

Normal cost as of 1/1	$ 25,000
Present value of future benefits	1,000,000
Present value of future compensation	10,000,000
Valuation compensation	1,000,000
Normal cost under entry age normal method as of 1/1	50,000
Present value of future normal costs under entry age normal method	500,000

Question 5

In what range is the minimum required contribution for 1993 payable 12/31/93?

(A) Less than $15,000

(B) $15,000 but less than $25,000

(C) $25,000 but less than $35,000

(D) $35,000 but less than $45,000

(E) $45,000 or more

1993

Data for Question 6

Plan effective date: 1/1/92.

Valuation date: 12/31.

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

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

Selected valuation results:

	12/31/92	12/31/93
Normal cost as of 12/31	$100,000	$100,000
Accrued liability (excluding normal cost for year)	0	118,000
Actuarial value of assets	0	113,000
Market value of assets	0	115,000
Unit credit normal cost on a termination basis as of 12/31	80,000	90,000
Present value of accrued benefits on a termination basis (excluding unit credit normal cost for year)	0	116,000

The alternative minimum funding standard account was used for 1993 only.

The contribution for 1993 was paid on 12/31/93 in an amount equal to the minimum required contribution for 1993 determined as of 12/31/93.

Question 6

In what range is the amortization charge to the regular funding standard account for 1994 as of 12/31/94 due to the change from the alternative minimum funding standard account for 1993 to the regular funding standard account for 1994?

(A) Less than $1,500

(B) $1,500 but less than $1,800

(C) $1,800 but less than $2,100

(D) $2,100 but less than $2,400

(E) $2,400 or more

1993

Data for Question 7

Consider the following situations regarding enhanced early retirement benefits:

I. A defined benefit plan covers all of a company's more than 1,000 employees, including its executive staff, factory workers, and administrative support personnel. The plan is amended to provide an enhanced early retirement benefit for factory workers who are at least age 55, provided that they elect to retire between 1/1/94 and 9/30/94. None of the factory workers is a highly compensated employee.

II. A defined benefit plan has been amended each year since its inception in 1985 through 1995 to offer its participants who are at least age 55 an enhanced early retirement benefit, provided that they elect to retire in the first three months of the year. However, for 1996, the enhanced early retirement benefit is not offered. As a result, three employees over age 55 who retired in the first three months of 1996 did not receive an enhanced early retirement benefit.

III. A defined benefit plan is amended effective 1/1/94 to provide an enhanced early retirement benefit for all participants who are at least age 55. Effective 10/1/94, the plan is amended again to remove the enhanced early retirement benefit for eligible participants who do not retire before 1/1/95.

Question 7

Which, if any, of the above situations represents a violation or a potential violation of the anticutback provisions of IRC section 411(d)(6)?

(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.

1993

Data for Question 8

Plan effective date: 1/1/92.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 8% per year.

Selected valuation results:

	1/1/92	1/1/93
Normal cost as of 1/1	$ 50,000	$ 45,000
Unfunded liability	200,000	184,000
Actuarial (market) value of assets	0	86,000
Current liability projected to 12/31	86,000	180,000

Expected and actual benefit payments for 1992 and 1993: $0.

The contribution for 1992 was paid on 12/31/92 and was fully deductible.

The contribution for 1993 was paid on 7/1/93 in an amount equal to the deductible limit for 1993.

Number of participants on each day in 1993: 90.

Question 8

In what range is the credit balance in the funding standard account as of 12/31/93?

(A) Less than $30,000

(B) $30,000 but less than $33,000

(C) $33,000 but less than $36,000

(D) $36,000 but less than $39,000

(E) $39,000 or more

1993

Data for Question 9

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Current liability interest rate: 8% per year.

Selected valuation results and funding standard account items as of 1/1/93:

Current liability	\$300,000
Actuarial value of assets	200,000
Market value of assets	194,000
Credit balance	11,000
Amortization charge for initial accrued liability	5,000
Amortization charges for plan amendments	1,000
Amortization charges for assumption changes	1,000
Outstanding balance of unfunded old liability	50,000
Unfunded old liability amount	5,616

There have been no experience gains or losses.

There have been no unpredictable contingent events.

Number of participants on each day in 1993: 1,000.

Question 9

In what range is the additional funding charge for 1993 as of 12/31/93?

(A) Less than \$13,000

(B) \$13,000 but less than \$14,000

(C) \$14,000 but less than \$15,000

(D) \$15,000 but less than \$16,000

(E) \$16,000 or more

1993

Data for Question 10

Valuation date: 12/31.

Money purchase plan provisions:

Effective date: 1/1/80.
Employer contribution: 15% of compensation.

Defined benefit plan provisions:

Effective date: 1/1/92.
Normal retirement benefit: 85% of final 3-year average compensation.

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

Assumed compensation increases: 5% per year.

Assumed retirement age: 65.

Valuation data for employee Smith as of 12/31/93:

Date of birth 1/1/32
Date of hire 1/1/89
Valuation compensation:

1989	$30,000
1990	40,000
1991	50,000
1992	60,000
1993	70,000

Percentage of present value of accrued benefits for key employees under the plans for determining top-heavy status: 95%.

Defined contribution dollar limitation under IRC section 415 for 1987 - 1993: $30,000.

Defined benefit dollar limitation under IRC section 415 for 1993: $115,641.

Question 10

In what range is the maximum projected annual benefit payable to Smith from the defined benefit plan for purposes of determining the deductible limit for 1993?

(A) Less than $41,000

(B) $41,000 but less than $46,000

(C) $46,000 but less than $51,000

(D) $51,000 but less than $56,000

(E) $56,000 or more

1993

Data for Question 11

Plan effective date: 1/1/80.

Actuarial cost method:

Before 1985: Aggregate.
After 1984: Frozen initial liability.

Valuation interest rate: 7.5% per year.

Credit balance in funding standard account as of 12/31/84: $0.

Unfunded accrued liability as of 1/1/85: $500,000.

Credit balance in funding standard account as of 12/31/92: $30,000.

Selected valuation results as of 1/1/93:

Present value of future benefits	$1,000,000
Actuarial value of assets	400,000
Market value of assets	420,000
Present value of future compensation	1,000,000
Valuation compensation	100,000

Question 11

In what range is the minimum required contribution for 1993 payable 12/31/93?

(A) Less than $31,500

(B) $31,500 but less than $32,500

(C) $32,500 but less than $33,500

(D) $33,500 but less than $34,500

(E) $34,500 or more

1993

Data for Question 12

Plan effective date: 1/1/85.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 8% per year.

Initial accrued liability: $500,000.

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

Normal cost for 1993 as of 1/1/93: $55,000.

The minimum funding requirement for 1993 was fully waived.

Contribution for 1993: $0.

Normal cost for 1994 as of 1/1/94: $50,000.

150% of applicable mid-term federal rate for January, 1994: 11.90%.

Additional interest charge due to late payment of quarterly contributions:

For 1993: $ 0.
For 1994: 1,105.

Question 12

In what range is the minimum required contribution for 1994 payable 12/31/94?

(A) Less than $113,000

(B) $113,000 but less than $118,000

(C) $118,000 but less than $123,000

(D) $123,000 but less than $128,000

(E) $128,000 or more

1993

Data for Question 13

Plan effective date: 1/1/89.

Normal retirement benefit: 1.5% of highest 3-year average compensation for each year of service.

The defined benefit plan has always been top-heavy but not super top-heavy. The 125% factor is used in determining the IRC section 415(e) fraction. The defined benefit plan provides for the increased minimum top-heavy benefit using the longest compensation averaging period permitted by IRC section 416.

Data for non-key employee Smith:

Date of birth 1/1/40
Date of hire 1/1/87
Annual compensation:

1987	$16,000
1988	18,000
1989	20,000
1990	22,000
1991	24,000
1992	28,000
1993	32,000

Smith's defined contribution fraction as of 12/31/93: 0.10.

Question 13

In what range is the annual accrued benefit for Smith as of 12/31/93?

(A) Less than $3,000

(B) $3,000 but less than $3,300

(C) $3,300 but less than $3,600

(D) $3,600 but less than $3,900

(E) $3,900 or more

1993

Data for Question 14

Plan effective date: 1/1/89.

Actuarial cost method: Entry age normal.

Valuation interest rate: 8% per year.

Credit balance in funding standard account as of 12/31/92: $2,000.

Accumulated reconciliation account balance as of 12/31/92: $1,000.

Selected valuation results as of 1/1/93:

Normal cost as of 1/1	$15,000
Accrued liability	70,000
Actuarial value of assets	50,000

There have been no experience gains or losses other than an experience gain during 1990 of $5,000.

Question 14

In what range is the minimum required contribution for 1993 payable as of the beginning of the year (1/1/93)?

(A) Less than $13,550

(B) $13,550 but less than $14,050

(C) $14,050 but less than $14,550

(D) $14,550 but less than $15,050

(E) $15,050 or more

1993

Data for Question 15

Plan effective date: 1/1/89.

Actuarial cost method: Entry age normal.

Valuation interest rate: 8% per year.

Current liability interest rate: 7.5% per year.

Credit balance in funding standard account as of 12/31/92: $2,000.

Selected valuation results as of 1/1/93:

Normal cost as of 1/1	$ 25,000
Accrued liability	500,000
Actuarial (market) value of assets	155,000
Current liability projected to 12/31	250,000

Expected benefit payments for 1993: $0.

There have been no experience gains or losses other than an experience gain during 1991 of $7,000.

Number of participants on each day in 1993: 180.

Question 15

In what range is the deductible limit for 1993?

(A) Less than $81,000

(B) $81,000 but less than $83,000

(C) $83,000 but less than $85,000

(D) $85,000 but less than $87,000

(E) $87,000 or more

1993

Data for Question 16

Defined benefit plan effective date: 1/1/90.

Normal retirement benefit: 100% of highest 3-year average compensation, prorated for less than 10 years of service.

Money purchase plan effective date: 1/1/91.

Employer contribution to money purchase plan: 9% of compensation, paid on 12/31.

Effective 1/1/93, the plans were amended to provide that contributions to the money purchase plan will be reduced first if benefits and contributions would otherwise be more than permitted by the combined limits of IRC section 415(e).

No employer contributions to the money purchase plan were limited before 1993 due to application of IRC section 415(e).

Data for employee Smith:

Date of birth	1/1/35
Date of hire	1/1/90
Annual compensation:	
1990	$ 40,000
1991	100,000
1992	110,000
1993	150,000

Defined benefit dollar limitation under IRC section 415 for 1993: $115,641.

Question 16

In what range is the employer contribution for 1993 paid to Smith's money purchase plan account?

(A) Less than $1,500

(B) $1,500 but less than $3,000

(C) $3,000 but less than $4,500

(D) $4,500 but less than $6,000

(E) $6,000 or more

1993

Data for Question 17

Defined benefit plan effective date: 1/1/93.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 8% per year.

Initial accrued liability: $1,800,000.

Normal cost for 1993 as of 1/1/93: $300,000.

Contribution to defined benefit plan for 1993: $550,000 paid on 12/31/93.

401(k) plan effective date: 1/1/90.

Contributions to 401(k) plan for 1993:

Employee pre-tax (unmatched) contributions: $10,000.
Discretionary employer contribution: $0.

Total taxable compensation paid to employees for 1993: $1,700,000.

All employees are participants in both plans.

Question 17

In what range is the plan sponsor's excise tax for nondeductible contributions for 1993?

(A) Less than $7,000

(B) $7,000 but less than $9,000

(C) $9,000 but less than $11,000

(D) $11,000 but less than $13,000

(E) $13,000 or more

1993

Data for Question 18

Normal retirement benefit: The greater of (a) 10% of each year's compensation since date of participation, or (b) $120 per month for each year of participation.

Data for employees Smith and Brown:

	Smith	Brown
Date of birth	1/1/31	1/1/31
Date of hire	1/1/88	1/1/88
Date of participation	1/1/89	1/1/89
Annual compensation:		
1988	$10,000	$200,000
1989	12,000	200,000
1990	11,000	200,000
1991	10,000	200,000
1992	9,000	200,000
1993	9,000	200,000

Defined benefit dollar limitation under IRC section 415 for 1993: $115,641.

Question 18

In what range is the sum of the annual accrued benefits for Smith and Brown as of 12/31/93?

(A) Less than $64,000

(B) $64,000 but less than $64,500

(C) $64,500 but less than $65,000

(D) $65,000 but less than $65,500

(E) $65,500 or more

1993

Data for Question 19

As of 12/31/93, Plan A is split into Plans B and C. The sponsors of Plans B and C are members of the same controlled group.

Early retirement benefit: None.

Liability component of full funding limitation for Plan A as of 12/31/93:

Attributable to Plan B participants	$1,200,000
Attributable to Plan C participants	900,000
	2,100,000

Credit balance in Plan A's funding standard account as of 12/31/93: $200,000.

Present value of accrued benefits on a termination basis as of 12/31/93:

ERISA Section 4044 Priority Category	Plan A	Plan B	Plan C
1-4	$1,250,000	$ 750,000	$500,000
5	250,000	175,000	75,000
6	100,000	75,000	25,000
Total	1,600,000	1,000,000	600,000

Market value of assets as of 12/31/93: $2,600,000.

Question 19

What is the amount of the assets allocated to Plan B as of 12/31/93?

(A) $1,000,000

(B) $1,040,000

(C) $1,400,000

(D) $1,625,000

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

1993

Data for Question 20

Plan effective date: 1/1/89.

Normal retirement benefit: 1.5% of highest 3-year average compensation for each year of service.

Mandatory employee contributions: 3% of compensation, paid on 12/31.

Vesting eligibility: Full and immediate.

Interest rate specified in plan for lump sum actuarial equivalence: PBGC interest rate(s) in effect as of 1/1 of plan year.

Data for participant Smith:

Date of birth	1/1/65
Date of hire	1/1/89
Date of termination	1/1/93

Annual compensation:

1989 - $50,000	1991 - $50,000
1990 - 50,000	1992 - 50,000

120% of applicable mid-term federal rate:

For 1990: 9.57%.	For 1992: 8.10%.
For 1991: 9.78%.	For 1993: 7.63%.

Selected PBGC life annuity factors and interest rates:

	Age 65 Life Annuity Factor	Immediate Annuity Interest Rate	Deferred Annuity Interest Rates		
			First 7 Yrs.	Next 8 Yrs.	After 15 Yrs.
For 1990:	8.60	7.25%	6.50%	5.25%	4.00%
For 1991:	8.60	7.25	6.50	5.25	4.00
For 1992:	9.03	6.50	5.75	4.50	4.00
For 1993:	9.51	5.75	5.00	4.00	4.00

Question 20

In what range is Smith's annual accrued benefit determined as of the date of termination?

(A) Less than $2,900

(B) $2,900 but less than $3,200

(C) $3,200 but less than $3,500

(D) $3,500 but less than $3,800

(E) $3,800 or more

1993

Data for Question 21

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.

Selected valuation results and funding standard account items:

	1/1/92	1/1/93
Normal cost as of 1/1	$100,000	$130,000
Net amortization charges as of 1/1	35,000	40,000

Contributions for 1992: Quarterly contributions of $30,000 each, paid on 4/15/92, 7/15/92, 10/15/92, and 1/15/93, and a final contribution of $35,000 paid on 6/15/93.

Additional interest charge due to late payment of quarterly contributions for 1992: $0.

No contributions for 1993 were paid before 4/15/93.

Question 21

In what range is the minimum required quarterly contribution for 1993 payable 4/15/93?

(A) Less than $35,000

(B) $35,000 but less than $37,000

(C) $37,000 but less than $39,000

(D) $39,000 but less than $41,000

(E) $41,000 or more

1993

Data for Question 22

Type of plan: Multiemployer.

Plan effective date: 1/1/80.

Normal retirement benefit:

Effective 1/1/80: \$20 per month for each year of service.
Effective 1/1/90: \$30 per month for each year of service.

Employee data as of 1/1/93:

Number of Employees	Age	Years of Service	Present Value of \$1 per Month Commencing at Age 65
8	40	20	30

There are no inactive participants.

The plan has always paid at least the normal cost plus interest on the unfunded liability.

Question 22

In what range is the present value of benefits guaranteed by the PBGC as of 1/1/93?

(A) Less than \$60,000

(B) \$60,000 but less than \$75,000

(C) \$75,000 but less than \$90,000

(D) \$90,000 but less than \$105,000

(E) \$105,000 or more

1993

Data for Question 23

As of 1/1/93, Plan A is split into Plans B and C.

Actuarial cost method: Frozen initial liability.

Selected valuation results and funding standard account items as of 1/1/93:

	Plan A	Plan B	Plan C
Actuarial value of assets	$150,000		
Market value of assets	125,000	$ 75,000	$ 50,000
Accrued liability under entry age normal method	300,000	195,000	105,000
Credit balance	30,000	18,000	12,000
Outstanding balance of the amortization base	360,000		

The outstanding balance of the amortization base is allocated to Plans B and C by the method illustrated in Revenue Ruling 81-212.

Question 23

In what range is the outstanding balance of the amortization base allocated to Plan B as of 1/1/93?

(A) Less than $231,000

(B) $231,000 but less than $236,000

(C) $236,000 but less than $241,000

(D) $241,000 but less than $246,000

(E) $246,000 or more

1993

Data for Question 24

Plan effective date: 1/1/92.

Normal retirement age: 60.

Normal retirement benefit: 3.5% of final 3-year average compensation for each year of service.

Preretirement death benefit: None.

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

Assumed compensation increases: 4% per year.

Assumed retirement age: 60.

Valuation data for employee Smith as of 1/1/93:

Date of birth	1/1/40
Date of hire	1/1/91
1992 compensation	$160,000

Defined benefit dollar limitation under IRC section 415 for 1993: $115,641.

Selected commutation functions and annuity values:

	5%		6%	
Age (x)	$N_x^{(12)}$	$\ddot{a}_x^{(12)}$	$N_x^{(12)}$	$\ddot{a}_x^{(12)}$
60	538	11.5	281	10.6
62	450	10.9	232	10.1
65	337	9.9	170	9.3

Question 24

In what range is the maximum projected annual benefit payable to Smith for purposes of determining the deductible limit for 1993?

(A) Less than $56,750

(B) $56,750 but less than $58,750

(C) $58,750 but less than $60,750

(D) $60,750 but less than $62,750

(E) $62,750 or more

1993

Data for Question 25

Plan effective date: 1/1/85.

Actuarial cost method: Entry age normal.

Valuation interest rate: 8% per year.

Asset valuation method:

Before 1993: 5-year moving average of market values, subject to a 20% corridor below and above the market value.
After 1992: Market value.

Selected valuation results and funding standard account items:

	1/1/92	1/1/93
Normal cost as of 1/1	$ 50,000	$ 63,000
Accrued liability	400,000	500,000
Market value of assets	260,000	320,000
5-year moving average of market values	300,000	380,000
Credit balance	0	
Net amortization charges as of 1/1	10,000	

There were no experience gains or losses before 1990.

The contribution for 1992 was paid on 1/1/92 in an amount equal to the minimum required contribution for 1992 determined as of 1/1/92.

Question 25

In what range is the minimum required contribution for 1993 payable 12/31/93?

(A) Less than $84,000

(B) $84,000 but less than $87,000

(C) $87,000 but less than $90,000

(D) $90,000 but less than $93,000

(E) $93,000 or more

Data for Question 26

Plan effective date: 1/1/92.

Actuarial cost method: Projected unit credit.

Valuation interest rate: 8% per year.

Selected valuation results:

	1/1/92	1/1/93
Normal cost as of 1/1	$ 50,000	$ 60,000
Accrued liability	450,000	550,000

Contribution for 1992: $100,000 paid on 12/31/92.

No contributions for 1993 were paid before 4/15/93.

Question 26

In what range is the minimum required quarterly contribution for 1993 payable 4/15/93?

(A) Less than $16,000

(B) $16,000 but less than $16,250

(C) $16,250 but less than $16,500

(D) $16,500 but less than $16,750

(E) $16,750 or more

1993

Data for Question 27

Normal retirement benefit: 1.5% of final 5-year average compensation for each year of service, plus X% of final 5-year average compensation in excess of Social Security Covered Compensation for each year of service up to 35 years.

Earliest retirement age: 58.

Early retirement reduction: 5/12% for each month by which the benefit commencement date precedes the normal retirement date.

Allowable forms of payment: Qualified 50% joint and survivor annuity if married; life annuity if single.

Active participants range in age from 22 to 62.

Unadjusted permitted disparity factors under IRC section 401(l) for different Social Security Retirement Ages (SSRA):

Age	SSRA 65	SSRA 66	SSRA 67
67	-	-	.750
66	-	.750	.700
65	.750	.700	.650
64	.700	.650	.600
63	.650	.600	.550
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	.350
55	.375	.350	.325

Question 27

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

(A) Less than 0.550%

(B) 0.550% but less than 0.575%

(C) 0.575% but less than 0.600%

(D) 0.600% but less than 0.625%

(E) 0.625% or more

1993

Data for Question 28

Actuarial cost method: Projected unit credit.

Valuation interest rate: 8% per year.

The plan sponsor contributes to an IRC section 401(h) account, which was established on 1/1/93, to provide for postretirement medical benefits.

Selected valuation results as of 1/1/93:

	Pension Benefits	Medical Benefits
Normal cost as of 1/1	$ 750,000	$ 300,000
Accrued liability	10,000,000	2,000,000
Actuarial value of assets	8,000,000	0

The contribution for 1993 will be paid on 12/31/93.

The deductible limit for 1993 is determined under the fresh-start alternative.

Question 28

In what range is the deductible limit for 1993 for pension benefits and medical benefits combined?

(A) Less than $1,400,000

(B) $1,400,000 but less than $1,500,000

(C) $1,500,000 but less than $1,600,000

(D) $1,600,000 but less than $1,700,000

(E) $1,700,000 or more

1993

Data for Question 29

Plan effective date: 1/1/88.

Normal retirement benefit: 1.25% of career average compensation for each year of service since date of hire.

The plan has been top-heavy since its inception. The plan provides for the minimum top-heavy benefit using the longest compensation averaging period permitted by IRC section 416.

Actuarial cost method: Projected unit credit.

Actuarial assumptions:

Valuation interest rate: 7% per year.
Compensation increases: 5% per year.
Preretirement deaths and terminations: None.
Retirement age: 65.

Valuation data for non-key employee Smith as of 1/1/93:

Date of birth	1/1/37
Date of hire	1/1/82
1992 compensation	$30,000

Smith's compensation increased 5% per year from 1982 through 1992.

Selected annuity factor on the valuation basis:

$$\ddot{a}_{65}^{(12)} = 10$$

Question 29

In what range is Smith's accrued liability as of 1/1/93?

(A) Less than $23,000

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

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

(D) $25,000 but less than $26,000

(E) $26,000 or more

1993

Data for Question 30

Type of plan: Multiemployer.

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

Valuation interest rate: 8% per year.

History of contributions:

Year	Contributions Paid by All Employers	Contributions Required by Employer A
1988	$1,000,000	$24,000
1989	1,100,000	20,000
1990	1,200,000	18,000
1991	1,000,000	12,000
1992	1,100,000	10,000
1993	1,200,000	6,000

Unfunded present value of vested benefits as of 12/31/92: $6,650,000.

Unfunded present value of vested benefits as of 12/31/93: $6,500,000.

Employer A withdrew from the plan in 1993. No other employers have withdrawn from the plan.

Question 30

In what range is Employer A's withdrawal liability?

(A) Less than $35,000

(B) $35,000 but less than $55,000

(C) $55,000 but less than $75,000

(D) $75,000 but less than $95,000

(E) $95,000 or more

1993

Data for Question 31

Plan effective date: 1/1/90.

Normal retirement age: Later of age 65 or fifth anniversary of date of participation.

Normal retirement benefit: 85% of final 3-year average compensation, prorated for less than 10 years of service.

Preretirement death benefit: Present value of accrued benefit.

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

Actuarial cost method: Aggregate.

Actuarial assumptions:

Valuation interest rate: 7% per year.
Compensation increases: 5% per year.
Retirement age: Normal retirement age.

Valuation data for employee Smith as of 1/1/93:

Date of birth 1/1/28
Date of hire 1/1/86
Valuation compensation:

1990 -	$100,000	1992 -	$90,000
1991 -	90,000	1993 -	94,500

Defined benefit dollar limitation under IRC section 415 for 1993: $115,641.

Selected life annuity factors:

Age	5%	6%	7%
62	11.640	10.733	9.945
65	10.685	9.917	9.242
66	10.361	9.636	8.999
67	10.036	9.355	8.752

Question 31

In what range is Smith's projected annual retirement benefit for determining funding requirements for 1993?

(A) Less than $67,000

(B) $67,000 but less than $68,500

(C) $68,500 but less than $70,000

(D) $70,000 but less than $71,500

(E) $71,500 or more

1993

Data for Question 32

Plan effective date: 1/1/84.

Actuarial cost method: Frozen initial liability.

Valuation interest rate:

Before 1993: 8% per year.
After 1992: 7% per year.

Initial accrued liability: $500,000.

Credit balance in funding standard account as of 12/31/92: $30,000.

Selected valuation results as of 1/1/93:

Normal cost as of 1/1	$ 40,000
Unfunded liability	500,000

Contribution for 1993: $100,000 paid on 3/15/94.

Question 32

In what range is the credit balance in the funding standard account as of 12/31/93?

(A) Less than $37,000

(B) $37,000 but less than $39,000

(C) $39,000 but less than $41,000

(D) $41,000 but less than $43,000

(E) $43,000 or more

1993

Data for Question 33

Plan effective date: 1/1/86.

Actuarial cost method:

Before 1991: Aggregate.
After 1990: Accrued benefit (unit credit).

Valuation interest rate:

Before 1991: 8% per year.
After 1990: 7% per year.

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

Unfunded unit credit accrued liability as of 1/1/91: $600,000.

Experience loss during 1991: $50,000.

Credit balance in funding standard account as of 12/31/91: $20,000.

Normal cost for 1992 as of 1/1/92: $90,000.

Contribution for 1992: $150,000 paid on 1/1/92.

Selected valuation results as of 1/1/93:

Normal cost as of 1/1	$ 100,000
Accrued liability	1,600,000
Actuarial value of assets	900,000

Question 33

In what range is the minimum required contribution for 1993 payable 12/31/93?

(A) Less than $155,000

(B) $155,000 but less than $160,000

(C) $160,000 but less than $165,000

(D) $165,000 but less than $170,000

(E) $170,000 or more

1993

Data for Question 34

Plan effective date: 1/1/90.

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Current liability interest rate: 8% per year.

Initial accrued liability: $100,000.

There were no experience gains or losses during 1990 or 1992.

Credit balance in funding standard account as of 12/31/92: $40,000.

Selected valuation results as of 1/1/93:

Normal cost as of 1/1	$ 50,000
Accrued liability	325,000
Actuarial value of assets	310,000
Market value of assets	307,000
Current liability projected to 12/31	250,000

Expected benefit payments for 1993: $12,000 payable on 7/1/93.

Question 34

In what range is the deductible limit for 1993?

(A) Less than $58,000

(B) $58,000 but less than $59,000

(C) $59,000 but less than $60,000

(D) $60,000 but less than $61,000

(E) $61,000 or more

1993

Data for Question 35

Plan effective date: 1/1/80.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 8% per year.

Current liability interest rate: 9% per year.

Initial accrued liability: $500,000.

Additional unfunded liability due to plan amendment as of 1/1/85: $100,000.

Credit balance in funding standard account as of 12/31/92: $40,000.

Normal cost for 1993 as of 1/1/93: $50,000.

Unfunded current liability as of 1/1/93: $300,000.

Deficit reduction contribution for 1993 as of 1/1/93: $120,000.

Number of participants on each day in 1992 and 1993: 130.

Question 35

In what range is the minimum required contribution for 1993 payable 12/31/93?

(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

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ANSWER KEY

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