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JOINT BOARD FOR THE ENROLLMENT OF ACTUARIES

ENROLLED ACTUARIES PENSION EXAMINATION, SEGMENT A

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2003

Data for Question 1 (1 point)

Consider the following statement:

Every collectively bargained plan can use the shortfall funding method.

Question 1

Is the above statement true or false?

(A) True

(B) False

Data for Question 2 (1 point)

Plan effective date: 1/1/2003.

Normal retirement benefit: $30 per month per year of service.

Valuation interest rate: 7% per year.

Data for sole participant:

Date of birth	1/1/1973
Date of hire	1/1/2003

Consider the following statement.

The normal cost as of 1/1/2003 using the entry age cost method is greater than the normal cost using the unit credit cost method.

Question 2

Is the above statement true or false?

(A) True

(B) False

2003

Data for Question 3 (1 point)

Consider the following statement:

A change in the date on which assets are valued is considered to be a change in funding method.

Question 3

Is the above statement true or false?

(A) True

(B) False

2003

<u>Data for Question 4</u> (3 points)

Death benefit commencing upon death:

Single participants	\$20,000 lump sum
Married participants	\$500 per month

Actuarial cost method for ancillary benefits: One-year term cost.

Valuation interest rate: 7% per year.

The assumed probability of death at age 64 is 0.04.

All deaths are assumed to occur at the end of the year.

Married assumption: 60% of participants are assumed to be married with the spouse the same age as the participant.

Selected unisex annuity value: $\ddot{a}_{65}^{(12)} = 10.00$.

The plan has 100 participants, all age 64.

<u>Question 4</u>

In what range is the beginning of year normal cost for the death benefit?

(A) Less than \$110,000

(B) \$110,000 but less than \$170,000

(C) \$170,000 but less than \$230,000

(D) \$230,000 but less than \$290,000

(E) \$290,000 or more

2003

Data for Question 5 (4 points)

Plan effective date: 1/1/1999.

Actuarial cost method: Frozen initial liability.

Valuation interest rate:

Before 2003	8% per year
After 2002	7% per year

Credit balance in funding standard account as of 12/31/2002: $2,500.

Selected valuation results as of 1/1/2003:

	8%	7%
Normal cost	$35,000	$40,000
Unfunded liability	325,000	450,000

Contribution for 2003: $90,000 paid on 12/31/2003.

Question 5

In what range is the credit balance in the funding standard account as of 12/31/2003?

(A) Less than $4,000

(B) $4,000 but less than $4,500

(C) $4,500 but less than $5,000

(D) $5,000 but less than $5,500

(E) $5,500 or more

2003

Data for Question 6 (4 points)

Plan effective date: 1/1/2002.

Normal retirement benefit: 2% of final three-year average salary per year of service.

Actuarial cost method: Unit credit.

Selected actuarial assumptions:

Valuation interest rate	7% per year
Compensation increases	4% per year

Data for sole participant:

Date of birth	1/1/1952	
Date of hire	1/1/1997	
2001 compensation as reported for 1/1/2002 valuation		$50,000
2002 compensation as reported for 1/1/2003 valuation		$60,000

Selected annuity value:

$\ddot{a}_{65}^{(12)} = 10.00$

Normal cost as of 1/1/2002: $6,280.

Contribution for 2002: Amount equal to the minimum required contribution for 2002 paid on 12/31/2002.

Question 6

In what range is the minimum required contribution for 2003 as of 1/1/2003?

(A) Less than $8,250

(B) $8,250 but less than $9,250

(C) $9,250 but less than $10,250

(D) $10,250 but less than $11,250

(E) $11,250 or more

<u>Data for Question 7</u> (3 points)

Plan effective date: 1/1/2002.

Actuarial cost method: Aggregate.

Valuation interest rate: 7% per year.

Minimum contribution for 2002 plan year as of 12/31/2002: $200,000.

Normal cost for 2003 as of 1/1/2003: $210,000.

Contributions made for the 2002 and 2003 plan years:

Date	Plan Year	Amount
4/1/2002	2002	$100,000
10/1/2002	2002	70,000
9/15/2003	2002	30,000
4/1/2003	2003	120,000
9/1/2003	2003	60,000
1/15/2004	2003	50,000
9/15/2004	2003	40,000

The plan is not subject to quarterly contribution requirements.

<u>Question 7</u>

In what range is the credit balance in the funding standard account as of 12/31/2003?

(A) Less than $52,000

(B) $52,000 but less than $54,000

(C) $54,000 but less than $56,000

(D) $56,000 but less than $58,000

(E) $58,000 or more

<u>Data for Question 8</u> (3 points)

Plan effective date: 1/1/2002.

Normal retirement benefit: 2.50% of final compensation per year of service.

Normal retirement age: 63.

Actuarial cost method: Unit credit.

Selected actuarial assumptions:

Valuation interest rate	7% per year
Salary increases	3% per year

Data for sole participant:

Date of birth	1/1/1968
Date of hire	1/1/1993
2001 compensation	$42,000

Contribution for 2002: $7,000 paid on 4/1/2002.

Experience (gain)/loss for 2002 from sources other than investments: $0.

Unfunded accrued liability as of 1/1/2003: $28,000.

Selected annuity value: $\ddot{a}_{63}^{(12)} = 9.22$

<u>Question 8</u>

In what range is the investment experience for 2002 as of 1/1/2003?

(A) Gain of $2,250 or more

(B) Gain greater than $750 but less than $2,250

(C) Gain or loss less than or equal to $750

(D) Loss greater than $750 but less than $2,250

(E) Loss of $2,250 or more

2003

<u>Data for Question 9</u> (3 points)

Selected valuation results as of:	1/1/2000	1/1/2001	1/1/2002	1/1/2003
Market value of assets	$85,000	$ 90,000	$109,000	$100,000
Actuarial value of assets	80,000	100,000	112,000	85,000
Credit balance	2,000	3,000	3,000	4,000
Current liability computed using the highest interest rate in the permissible range	87,000	110,000	100,000	107,000
RPA '94 current liability	90,000	110,000	110,000	112,000

The plan has always had more than 150 participants.

All assets are "liquid assets."

For the first quarter of the 2002 and 2003 plan years the plan had a liquidity shortfall.

Consider the following statements:

I. The plan is exempt from the quarterly contribution requirement for the 2003 plan year.

II. The plan is exempt from the additional funding charge for the 2003 plan year.

III. The plan is exempt from the liquidity requirement for the 2003 plan year.

<u>Question 9</u>

Which, if any, of these statement(s) 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

2003

Data for Question 10 (3 points)

Actuarial cost method: Aggregate.

Valuation interest rate: 7% per year.

Credit balance in funding standard account as of 12/31/2002: $0.

Valuation results as of 1/1/2003:

Market value of assets	$820,000
Actuarial value of assets	830,000
Normal cost	60,000
Normal cost under entry age normal method	54,000
Accrued liability under entry age normal method	790,000

Funding waiver for 2002 as of 12/31/2002: $80,000.

Question 10

In what range is the 2003 full funding credit in the funding standard account as of 12/31/2003?

(A) Less than $54,800

(B) $54,800 but less than $56,400

(C) $56,400 but less than $58,000

(D) $58,000 but less than $59,600

(E) $59,600 or more

2003

Data for Question 11 (3 points)

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Credit balance in funding standard account as of 12/31/2002: $100,000.

Selected valuation results:

	1/1/2002	1/1/2003
Accrued liability	$2,500,000	$3,500,000
Normal cost	275,000	350,000

Actuarial (market) value of assets as of 1/1/2002: $2,000,000
Net balance of amortization bases as of 1/1/2003: $1,600,000

The only benefit payment during the year was a lump sum payment of $1,000,000 made on 7/1/2002.

A contribution of $400,000 was made on 10/1/2002.

Question 11

In what range is the absolute value of the asset gain/loss for 2002?

(A) Less than $465,000

(B) $465,000 but less than $475,000

(C) $475,000 but less than $485,000

(D) $485,000 but less than $495,000

(E) $495,000 or more

2003

Data for Question 12 (5 points)

Actuarial cost method: Aggregate.

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

Selected actuarial assumptions:

Valuation interest rate		7% per year
Retirement age		52
Salary increases:		
	Before 2003	3.5% per year
	After 2002	3.5% for all years except final year of employment, at which time a 40% salary increase is assumed

Credit balance in funding standard account as of 12/31/2002: $0.

Actuarial (market) value of assets as of 1/1/2003: $3,400,000.

Selected valuation data as of 1/1/2003:

2003 valuation compensation per participant	$50,000
Number of active participants	17
Age of each active participant	45
The plan has no inactive participants	

Selected annuity value:

$$\ddot{a}_{52}^{(12)} = 11.8$$

Question 12

In what range is the change in the normal cost for 2003 as of 1/1/2003, due to the assumption change?

(A) Less than $62,000

(B) $62,000 but less than $66,000

(C) $66,000 but less than $70,000

(D) $70,000 but less than $74,000

(E) $74,000 or more

2003

<u>Data for Question 13</u> (3 points)

Plan effective date: 1/1/1997.

Actuarial cost method: Frozen initial liability.

Initial actuarial liability: $500,000.

Valuation interest rate: 7% per year.

Credit balance in funding standard account as of 12/31/2002: $25,000.

Selected valuation results as of 1/1/2003:

Entry age normal accrued liability, before 1/1/2003 amendment	$1,100,000
Entry age normal accrued liability, after 1/1/2003 amendment	1,250,000

Minimum required contribution for 2003 as of 12/31/2003: $72,000.

<u>Question 13</u>

In what range is the normal cost for 2003 as of 1/1/2003?

(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

2003

<u>Data for Question 14</u> (3 points)

The plan has mandatory employee contributions.

Actuarial cost method: Aggregate.

Valuation interest rate: 7% per year.

Selected valuation results as of 1/1/2003:

Actuarial (market) value of assets	$275,000
Present value of total benefits	2,000,000
Present value of future employee contributions	250,000

Credit balance in funding standard account as of 12/31/2002: $0.

Data for all participants in the plan as of 1/1/2003:

Age	Number of Participants
53	30
55	20

<u>Question 14</u>

In what range is the employer normal cost for 2003 as of 1/1/2003?

(A) Less than $175,000

(B) $175,000 but less than $185,000

(C) $185,000 but less than $195,000

(D) $195,000 but less than $205,000

(E) $205,000 or more

2003

Data for Question 15 (4 points)

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Credit balance in funding standard account as of 12/31/2001: $2,500.

Selected valuation results as of 1/1/2002:

Unfunded accrued liability	$20,000
Normal cost	25,000

Contribution for 2002 made on 12/31/2002: $32,000.

Credit balance on 12/31/2002: $5,000.

Selected valuation results as of 1/1/2003:

Actuarial (market) value of assets	$300,000
Normal cost (after plan amendment)	28,000
Accrued liability before 1/1/2003 plan amendment	305,000
Accrued liability after 1/1/2003 plan amendment	330,000

No bases expired in either 2002 or 2003.

Question 15

In what range is the absolute value of the change in the end of year minimum required contribution between the 2002 and 2003 plan years?

(A) Less than $1,000

(B) $1,000 but less than $2,000

(C) $2,000 but less than $3,000

(D) $3,000 but less than $4,000

(E) $4,000 or more

2003

Data for Question 16 (5 points)

Effective date: 1/1/1990.

Actuarial cost method: Attained age normal.

Initial accrued liability: $200,000.

Selected actuarial assumptions:

Valuation interest rate	7% per year
Current liability interest rate	6% per year
Gateway current liability interest rate	6.65% per year

Credit balance in funding standard account as of 12/31/2002: $24,000.

Selected valuation results as of 1/1/2003:

Normal cost	$120,000
Current liability	1,200,000
Expected increase in current liability due to benefits accruing during the plan year	100,000
Unfunded old liability amount	0
Gateway percentage	78%
Funded current liability percentage	73%

There have always been at least 150 participants in the plan.

The "applicable percentage" of unfunded new liability is defined by the following formula, where FCL% is the funded current liability percentage:

30% - [(FCL% - 60%, not less than 0%) x 0.4]

Question 16

In what range is the minimum required contribution for 2003 as of 12/31/2003?

(A) Less than $160,000

(B) $160,000 but less than $170,000

(C) $170,000 but less than $180,000

(D) $180,000 but less than $190,000

(E) $190,000 or more

Data for Question 17 (5 points)

Plan effective date: 1/1/2002.

Normal retirement benefit: $35 per month for each year of service.

Early retirement benefit: Accrued benefit reduced by 4% for each year by which commencement of payments precedes age 65.

Actuarial cost method: Attained age normal.

Valuation interest rate: 7% per year.

Data for all plan participants:

Name	Date of Birth	Date of Hire
Smith	1/1/1963	1/1/1989
Jones	1/1/1941	1/1/1978

Contribution for 2002 made on 12/31/2002: $16,000.

Selected annuity values:

$$\ddot{a}_{62}^{(12)} = 10.60$$
$$\ddot{a}_{65}^{(12)} = 10.00$$

Participant Jones retired on 12/31/2002.

Question 17

In what range is the minimum required contribution for 2003 payable on 1/1/2003?

(A) Less than $3,800

(B) $3,800 but less than $4,300

(C) $4,300 but less than $4,800

(D) $4,800 but less than $5,300

(E) $5,300 or more

Data for Question 18 (3 points)

Plan effective date: 7/1/1997.

Plan year: 7/1 – 6/30.

Tax year: 1/1 – 12/31.

Actuarial cost method: Attained age normal.

Valuation interest rate: 7% per year.

Credit balance in funding standard account as of 6/30/2003: $25,000.

Valuation results as of 7/1/2003:

Normal cost	$45,000
Unfunded liability	450,000

The deductible limit for any tax year is the deductible limit determined on the basis of the plan year beginning in that tax year.

Question 18

In what range is the deductible limit for 2003?

(A) Less than $110,000

(B) $110,000 but less than $115,000

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

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

(E) $125,000 or more

2003

Data for Question 19 (4 points)

Plan effective date: 1/1/2002.

Actuarial cost method: Unit credit.

Valuation interest rate: 7% per year.

Selected valuation results:

	1/1/2002	1/1/2003
Normal cost	$55,000	$40,000
Accrued liability	100,000	130,000
Actuarial (market) value of assets	0	75,000

The employer contributed an amount equal to the maximum deductible contribution for 2002 on 7/1/2002.

Question 19

In what range is the minimum required contribution for 2003 payable 12/31/2003?

(A) Less than $32,000

(B) $32,000 but less than $35,000

(C) $35,000 but less than $38,000

(D) $38,000 but less than $41,000

(E) $41,000 or more

2003

<u>Data for Question 20</u> (3 points)

Actuarial cost method: Attained age normal.

Valuation interest rate: 7% per year.

Current liability interest rate: 6% per year.

Credit balance in funding standard account as of 12/31/2002: $0.

Selected valuation results as of 1/1/2003:

Actuarial value of assets	$819,000
Market value of assets	801,000
Entry age normal accrued liability	675,000
Entry age normal normal cost	75,000
Current liability	910,000
Expected increase in current liability due to benefits accruing during the plan year	83,000
Expected benefit payments	0

<u>Question 20</u>

In what range is the full funding limitation under IRC section 412 for 2003?

(A) $0

(B) More than $0 but less than $75,000

(C) $75,000 but less than $150,000

(D) $150,000 but less than $225,000

(E) More than $225,000

Data for Question 21 (4 points)

XYZ Company has three divisions with employees benefiting in two defined benefit (DB) and two money purchase (DC) plans as shown below:

Plan	Division 1	Division 2	Division 3
DB plans	Plan A		Plan B
DC plans	Plan C	Plan D	

Other information for the 2003 plan year:

	Division 1	Division 2	Division 3
Annual pay	$22,000,000	$10,000,000	$6,000,000
DB plan information			
Minimum 412 contribution	Plan A = $8,500,000		Plan B = $1,250,000
Actual contribution	Plan A = $9,000,000		Plan B = $1,400,000
Unfunded current liability projected to year-end	Plan A = $7,500,000		Plan B = $1,000,000
Maximum 404 contribution	Plan A = $12,000,000		Plan B = $1,500,000
DC plan contributions	Plan C = $500,000	Plan D = $300,000	

Question 21

In what range is the total amount of non-deductible contributions under IRC Section 404 for 2003?

(A) Less than $500,000

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

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

(D) $1,500,000 but less than $2,000,000

(E) $2,000,000 or more

2003

<u>Data for Question 22</u> (4 points)

Actuarial cost method:

Before 2003	Entry age normal
After 2002	Unit credit

Valuation interest rate: 7% per year.

There was an ERISA full funding credit in the 2002 funding standard account.

The credit balance in the funding standard account as of 12/31/2002: $5,000.

Selected valuation results as of 1/1/2003 after changes:

Amortization base due to 1/1/2003 plan amendment	$30,000
Amortization base due to 1/1/2003 assumption change	20,000
Amortization base due to 1/1/2003 funding method change	(10,000)
Normal cost	10,000
Actuarial accrued liability	170,000
Actuarial (market) value of assets	110,000

<u>Question 22</u>

In what range is the minimum required contribution for 2003 as of 12/31/2003?

(A) Less than $8,000

(B) $8,000 but less than $10,500

(C) $10,500 but less than $13,000

(D) $13,000 but less than $15,500

(E) $15,500 or more

Data for Question 23 (3 points)

Plan effective date: 1/1/1997.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 7% per year.

Credit balance in funding standard account as of 12/31/2002: $3,000.

Minimum funding amortization bases:

Type of base	Date Established	Outstanding balance on 1/1/2003
Initial accrued liability	1/1/1997	$500,000
Assumption change	1/1/2000	50,000
Plan amendment	1/1/2002	75,000

Normal cost as of 1/1/2003: $30,500.

Question 23

In what range is the minimum required contribution for 2003 as of 12/31/2003?

(A) Less than $81,000

(B) $81,000 but less than $84,000

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

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

(E) $90,000 or more

2003

Data for Question 24 (3 points)

Plan effective date: 1/1/2003.

Normal retirement age: 62.

Normal retirement benefit: 4% of final three-year average compensation for each year of service.

Actuarial cost method: Unit credit.

Selected valuation assumptions:

Valuation interest rate	7% per year
Salary increase	0% per year

Data for sole participant as of 1/1/2003:

Date of birth	1/1/1954
Date of hire	1/1/2001
2003 valuation compensation	$190,000
2002 compensation	180,000
2001 compensation	170,000

Selected annuity values:

$$\ddot{a}_{62}^{(12)} = 9.25$$

Question 24

In what range is the minimum required contribution for 2003 as of 12/31/2003?

(A) Less than $33,800

(B) $33,800 but less than $34,800

(C) $34,800 but less than $35,800

(D) $35,800 but less than $36,800

(E) $36,800 or more

2003

Data for Question 25 (5 points)

Normal retirement benefit: 2% of final compensation for each year of service.

Actuarial cost method: Aggregate.

Selected actuarial assumptions:

Valuation interest rate	7% per year
Salary increase	4% per year

Credit balance in funding standard account as of 12/31/2002: $0.

Actuarial value of plan assets as of 1/1/2003: $190,000.

Market value of plan assets as of 1/1/2003: $185,000.

Current liability (including expected increase for the year due to benefits accruing during the plan year) adjusted to 12/31/2003: $175,000.

Data for sole plan participant as of 1/1/2003:

Age	50
Service	10
2002 compensation	$400,000

Selected annuity value:

$$\ddot{a}_{65}^{(12)} = 10.2$$

Compensation limit under IRC §401(a)(17) for 2003: $200,000.

Question 25

In what range is the minimum required contribution for 2003 as of 12/31/2003?

(A) Less than $10,500

(B) $10,500 but less than $12,500

(C) $12,500 but less than $14,500

(D) $14,500 but less than $16,500

(E) $16,500 or more

Data for Question 26 (4 points)

Plan effective date: 1/1/1998.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 7% per year.

Initial accrued liability: $1,000,000.

Credit balance in funding standard account as of 12/31/2001: $5,000.

Normal cost for 2002 as of 1/1/2002: $125,000.

Contribution for 2002 paid on 4/15/2002: $210,000.

Normal cost for 2003 as of 1/1/2003: $140,000.

The minimum required quarterly contribution due 4/15/2003 was paid on that date.

Question 26

In what range is the minimum amount needed to satisfy the quarterly contribution requirement due 7/15/2003?

(A) Less than $40,300

(B) $40,300 but less than $44,300

(C) $44,300 but less than $48,300

(D) $48,300 but less than $52,300

(E) $52,300 or more

2003

Data for Question 27 (3 points)

Effective date: 1/1/1999.

Normal retirement benefit:

Before 2003	\$42 per month for each year of service
After 2002	\$47 per month for each year of service before 2003 plus \$50 per month for each year of service after 2002

Actuarial cost method: Unit credit.

Valuation interest rate: 7% per year.

There have been no gains or losses.

Credit balance in funding standard account as of 12/31/2002: \$0.

Data for sole participant:

Date of birth	1/1/1952
Date of hire	1/1/1975

Selected annuity values: $\ddot{a}_{65}^{(12)} = 10.00$.

Question 27

In what range is the increase in the minimum contribution for 2003 payable 1/1/2003 due to the plan amendment?

(A) Less than \$750

(B) \$750 but less than \$900

(C) \$900 but less than \$1,050

(D) \$1,050 but less than \$1,200

(E) \$1,200 or more

Data for Question 28 (5 points)

Type of plan: Multiemployer plan.

Plan effective date: 1/1/2000.

Actuarial cost method: Unit credit.

Valuation interest rate:

Before 2003	7.5% per year
After 2002	7% per year

Amortization charges/(credits) for all amortization bases in the 2002 funding standard account:

Type of base	Effective date	Amortization payment at 1/1/2002
Initial accrued liability	1/1/2000	$10,000
Increase due to plan amendment	1/1/2001	30,000
Increase due to change in mortality assumption	1/1/2002	100,000
Actuarial (gain)/loss	1/1/2002	(50,000)

There were no gains or losses during 2002.

Change in accrued liability as of 1/1/2003 due to change in interest rate: $101,000.

Change in normal cost as of 1/1/2003 due to change in interest rate: $20,000.

Question 28

In what range is the change in the minimum required contribution for 2003 as of 1/1/2003 due to the change in the interest rate?

(A) Less than $22,000

(B) $22,000 but less than $25,000

(C) $25,000 but less than $28,000

(D) $28,000 but less than $31,000

(E) $31,000 or more

2003

<u>Data for Question 29</u> (4 points)

Normal retirement benefit: $20 per month times years of service.

Early retirement eligibility: 62.

Early retirement benefit: Unreduced accrued benefit.

Actuarial cost method: Aggregate.

Selected actuarial assumptions:

Valuation interest rate	7% per year
Retirement age	
Before 2003	65
After 2002	64

Credit balance in funding standard account as of 12/31/2002: $0.

Actuarial (market) value of assets as of 1/1/2003: $10,000.

Data for sole participant:

Date of birth	1/1/1948
Date of hire	1/1/1978

Selected annuity values:

$\ddot{a}_{64}^{(12)} = 8.35$ $\ddot{a}_{65}^{(12)} = 8.14$

<u>Question 29</u>

In what range is the increase in the normal cost for 2003 as of 1/1/2003 due to the change in the assumed retirement age?

(A) Less than $400

(B) $400 but less than $500

(C) $500 but less than $600

(D) $600 but less than $700

(E) $700 or more

Data for Question 30 (5 points)

Plan effective date: 1/1/2002.

Actuarial cost method: Unit credit.

Valuation interest rate: 7% per year.

Selected valuation results as of:	1/1/2002	1/1/2003
Normal cost	$75,000	$75,000
Actuarial accrued liability	0	134,000
Actuarial (market) value of assets	0	50,000
Expected benefit payments	0	0

Current liability (including expected increase for the year due to benefits accruing during the plan year) adjusted to 12/31/03: $144,000.

Contribution for the 2002 plan year paid on 7/1/2002: $80,000.

The entire contribution for the 2003 plan year was made on 12/31/2003 in an amount equal to the deductible limit.

Question 30

In what range is the deductible limit for the 2003 plan year?

(A) Less than $91,000

(B) $91,000 but less than $93,000

(C) $93,000 but less than $95,000

(D) $95,000 but less than $97,000

(E) $97,000 or more

2003

<u>Data for Question 31</u> (3 points)

Plan effective date: 1/1/1995.

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Initial accrued liability: $200,000.

Credit balance in funding standard account as of 12/31/2002: $10,000.

Selected valuation results as of 1/1/2003:

Normal cost	$65,000
Accrued liability	595,000
Actuarial (market) value of assets	525,000

The only experience gains or losses occurred during 1999.

<u>Question 31</u>

In what range is the minimum required contribution for 2003 as of 12/31/2003?

(A) Less than $15,000

(B) $15,000 but less than $20,000

(C) $20,000 but less than $25,000

(D) $25,000 but less than $30,000

(E) $30,000 or more

2003

<u>Data for Question 32</u> (2 points)

Consider the following statements regarding liquidity requirements:

I. For a given plan year, plans with funded current liability percentage greater than or equal to 100% for the preceding plan year, and plans that on every day of the preceding plan year had 100 or fewer participants, are <u>not</u> subject to the liquidity requirements.

II. Multiemployer plans are <u>not</u> subject to the liquidity requirements.

III. The contribution required to satisfy the liquidity requirement is not more than the amount necessary to increase the funded current liability percentage at the end of the current year to 100%.

<u>Question 32</u>

Which, if any, of the above statement(s) 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

2003

<u>Data for Question 33</u> (4 points)

Plan year: 1/1 – 12/31.

Tax year: 7/1 – 6/30.

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Credit balance in funding standard account as of 12/31/2001: $5,000.

Selected valuation results:

	1/1/2002	1/1/2003
Normal cost	$50,000	$52,000
IRC section 412 net amortization charges	10,000	13,000
IRC section 404 net amortization charges	15,000	17,500

Contribution for the 2002 plan year made on 6/30/2002: $50,000.

Contribution for the 2002 plan year made on 12/31/2002 to be deducted in tax year ending 6/30/2003: $10,000.

IRC section 404 deductible limits are based upon the plan year beginning within the employer's tax year.

<u>Question 33</u>

In what range is the deductible limit for the tax year ending 6/30/2003?

(A) Less than $73,000

(B) $73,000 but less than $74,300

(C) $74,300 but less than $75,600

(D) $75,600 but less than $76,900

(E) $76,900 or more

Data for Question 34 (3 points)

Actuarial cost method: Unit credit.

Normal retirement benefit: $100 per month per year of service.

Pre-retirement death benefit: None.

Valuation assumptions:

	Current	Proposed
Valuation interest rate	7% per year	8% per year
Mortality table	UP84	GAM83

For all values of x in the respective mortality tables, $q_x^{UP84} > q_x^{GAM83}$.

Participant data for sole participant at 1/1/2003:

Age	40
Service	10

Consider the following statements:

I. The proposed change in the interest rate alone would decrease the normal cost.

II. The proposed change in the mortality table alone would increase the actuarial accrued liability.

III. The proposed change in the mortality table and interest rate would either decrease both the actuarial accrued liability and normal cost or increase both the actuarial accrued liability and normal cost.

Question 34

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

(A) I and II

(B) I and III

(C) II and III

(D) I, II, and III

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

2003

<u>Data for Question 35</u> (5 points)

Plan effective date: 1/1/1986.

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Current liability interest rate for 2003 (maximum allowable): 6.65% per year.

Credit balance in funding standard account as of 12/31/2002: $10,000.

Selected valuation results and other information as of 1/1/2003:

Number of participants	200
Normal cost	$50,000
Actuarial (market) value of assets before 1/1/2003 method change	400,000
Actuarial value of assets after 1/1/2003 method change	420,000
Current liability	460,000
Expected increase in current liability due to benefits accruing during the plan year	50,000
Unfunded old liability	0
Net amortization charges and credits before 1/1/2003 method change	10,000

The "Gateway Percentage" is 82% for 2001 and 85% for 2002.

The "applicable percentage" of unfunded new liability is defined by the following formula, where FCL% is the funded current liability percentage:

30% - [(FCL% - 60%, not less than 0%) x 0.4]

Maximum number of participants in the prior year: 140.

<u>Question 35</u>

In what range is the change in the 2003 additional funding charge due to the change in asset valuation method?

(A) Less than $1,300

(B) $1,300 but less than $2,300

(C) $2,300 but less than $3,300

(D) $3,300 but less than $4,300

(E) $4,300 or more

2003

Data for Question 36 (4 points)

Plan effective date: 1/1/2003.

Normal retirement benefit formula: 5% of final salary times years of service.

Pre-retirement death benefit: Lump sum payment of $100,000.

Actuarial cost method: Individual aggregate (split funded).

Pre-retirement funding assumptions:

Valuation interest rate	7% per year
Salary increase	0% per year
Mortality decrements	

Age x	q_x
62	0.011
63	0.012
64	0.013

Preretirement death is assumed to occur at the end of the year
There are no other pre-retirement decrements.

Data for sole participant:

Date of birth	1/1/1941
Date of hire	1/1/2002
2002 compensation	$60,000

Cost of insurance: $50 per $1,000 of insurance.
Cash value of insurance at age 65: $75 per $1,000 of insurance.

Selected annuity rate: $\ddot{a}_{65}^{(12)} = 9.24$.

Question 36

In what range is the minimum required contribution for 2003 as of 1/1/2003?

(A) Less than $31,000

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

(C) $33,000 but less than $35,000

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

(E) $37,000 or more

2003

Data for Question 37 (5 points)

Plan effective date: 1/1/1998.

Valuation interest rate: 7% per year.

Actuarial cost method:

Before 2003	Entry age normal
After 2002	Unit credit

Selected valuation results as of 1/1/2003:

	Entry age normal	Unit credit
Normal cost	\$ 35,000	\$ 37,000
Accrued liability	980,000	800,000
Actuarial (market) value of assets	790,000	790,000

Information on all minimum funding amortization bases as of 1/1/2003 other than the change in actuarial cost method:

	Effective date	Outstanding balance of base on 1/1/2003
Initial unfunded liability	1/1/1998	\$90,000
Assumption change	1/1/1999	30,000
Plan change	1/1/2001	50,000
Actuarial loss	1/1/2003	25,000

Question 37

In what range is the minimum required contribution for 2003 as of 12/31/2003?

(A) Less than \$26,000

(B) \$26,000 but less than \$31,000

(C) \$31,000 but less than \$36,000

(D) \$36,000 but less than \$41,000

(E) \$41,000 or more

2003

Data for Question 38 (5 points)

Plan effective date: 1/1/2002.

Normal retirement benefit:

Prior to 1/1/2003	5% of final compensation per year of service up to 10 years
After 12/31/2002	7% of final compensation per year of service up to 10 years

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Selected valuation results based on the benefit formula in effect on 12/31/2002:

	1/1/2002	1/1/2003
Accrued liability	$2,500,000	$3,300,000
Normal cost	340,800	364,000

Contribution for 2002: $700,000 paid on 7/1/2002.

Actual investment earnings during 2002: $45,000.

Benefit payments during 2002: $0.

There are no inactive participants in the valuation as of either valuation date.

Question 38

In what range is the minimum required contribution for 2003 as of 12/31/2003?

(A) Less than $600,000

(B) $600,000 but less than $650,000

(C) $650,000 but less than $700,000

(D) $700,000 but less than $750,000

(E) $750,000 or more

<u>Data for Question 39</u> (2 points)

Valuation interest rate: 7% per year.

Selected valuation results as of 1/1/2003 prior to any 2002 contributions:

Market value of assets	$28,500,000
Actuarial value of assets	30,500,000
Current liability	41,200,000

The "Gateway Percentage" as of 1/1/2001 and 1/1/2002 was 90%.

<u>Question 39</u>

In what range is the minimum contribution for 2002 payable 9/15/2003 to avoid an additional funding charge for 2003?

(A) Less than $4,000,000

(B) $4,000,000 but less than $6,000,000

(C) $6,000,000 but less than $8,000,000

(D) $8,000,000 but less than $10,000,000

(E) $10,000,000 or more

<u>Data for Question 40</u> (4 points)

Actuarial cost method: Individual level premium.

Valuation assumptions:

Valuation interest rate	7% per year
Compensation increases	None

Credit balance in funding standard account as of 12/31/2002: $0.

Selected valuation results as of 1/1/2003:

Normal cost	$6,500
Present value of future benefits	100,000
Actuarial (market) value of assets	12,000

Current liability, including expected increase for the year due to benefits accruing during the plan year, adjusted to 12/31/2003: $18,000.

There were no experience gains or losses before 2002.

The entire contribution for the 2003 plan year was made on 12/31/2003.

Date of birth for sole participant: 1/1/1961.

<u>Question 40</u>

In what range is the deductible limit for 2003?

(A) Less than $6,000

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

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

(D) $8,000 but less than $9,000

(E) $9,000 or more

2003

Data for Question 41 (4 points)

Plan effective date: 1/1/2002.

Actuarial cost method: Unit credit.

Valuation interest rate: 7% per year.

Normal retirement benefit:

Effective 1/1/2002 $60 per month per year of service.
Effective 1/1/2003 $80 per month per year of service.

Selected valuation results:

	1/1/2002	1/1/2003
Benefit level	$60	$80
Normal cost	100,000	116,000
Actuarial accrued liability	600,000	864,000

Contribution for 2002: $170,000 paid on 4/1/2002.

There were no benefit payments in 2002.

There are no inactive participants in the valuation as of either valuation date.

There were no investment gains or losses during 2002.

Question 41

In what range is the minimum required contribution for 2003 as of 12/31/2003?

(A) Less than $145,000

(B) $145,000 but less than $158,000

(C) $158,000 but less than $171,000

(D) $171,000 but less than $184,000

(E) $184,000 or more

2003

<u>Data for Question 42</u> (5 points)

Plan effective date: 1/1/2002.

Normal retirement benefit: $1,000 per year for each year of service.

Actuarial cost method: Attained age normal.

Valuation interest rate: 7% per year.

Data for sole participant:

Date of birth	1/1/1957
Date of hire	1/1/1992

The 2002 maximum deductible contribution was made on 1/1/2002.

Actuarial (market) value of assets as of 1/1/2003: $11,000.

The full funding limitation does not apply.

Selected annuity value: $\ddot{a}_{65}^{(12)} = 9.24$

<u>Question 42</u>

In what range is the minimum required contribution for 2003 as of 12/31/2003?

(A) Less than $4,000

(B) $4,000 but less than $4,500

(C) $4,500 but less than $5,000

(D) $5,000 but less than $5,500

(E) $5,500 or more

Data for Question 43 (3 points)

Plan effective date: 1/1/2000.

Actuarial cost method: Frozen initial liability.

Valuation interest rate:

Before 2003	8% per year
After 2002	7% per year

Initial accrued liability: $220,000.

Selected valuation results as of 1/1/2003:

	8%	7%
Normal cost	$18,000	$21,000
Entry age normal accrued liability	140,000	160,000

The contribution for each year before 2003 was paid on 12/31 of that year in an amount equal to the deductible limit for that year.

Question 43

In what range is the deductible limit for 2003?

(A) Less than $54,700

(B) $54,700 but less than $55,700

(C) $55,700 but less than $56,700

(D) $56,700 but less than $57,700

(E) $57,700 or more

Data for Question 44 (4 points)

Normal retirement benefit: $40 per month per year of service.

Early retirement eligibility: Age 55.

Early retirement benefit: Unreduced accrued benefit payable at age 62. Prior to age 62, accrued benefit, reduced by 6% for each year by which the benefit commencement date precedes age 62.

Actuarial cost method: Unit credit.

Valuation interest rate: 7% per year.

Retirement assumption and selected annuity values:

Age x	Probability of Retirement	$\ddot{a}_x^{(12)}$
55	0.50	10.38
62	0.75	9.95
65	1.00	9.24

Retirements are assumed to occur at the beginning of the year.

Pre-retirement decrements: None.

Valuation data for sole participant:

Date of birth	1/1/1953
Date of hire	1/1/1985

Question 44

In what range is the accrued liability as of 1/1/2003?

(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

2003

Data for Question 45 (3 points)

Type of plan: Multiemployer plan.

Plan effective date: 1/1/1995.

Actuarial cost method: Unit credit.

Valuation interest rate: 7% per year.

Selected valuation results as of 1/1/2003 and projected values as of 12/31/2003 for IRC Section 404 purposes:

	1/1/2003
Normal cost	$74,000
Accrued liability	200,000

	12/31/2003
Actuarial value of assets	$201,000
Market value of assets	206,000
Current liability including expected increase for the year due to benefits accruing during the plan year	283,000
Expected benefit payments	0

The fresh start approach is used for limit adjustments under IRC section 404.

Minimum required contribution for 2003 as of 12/31/2003: $71,000.

Question 45

In what range is the maximum deductible contribution for 2003?

(A) Less than $76,000

(B) $76,000 but less than $81,000

(C) $81,000 but less than $86,000

(D) $86,000 but less than $91,000

(E) $91,000 or more

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Answer Key

Question No.	Answer	Question No.	Answer
1	B	31	C
2	A	32	D
3	A	33	B
4	B	34	D
5	B	35	D
6	E	36	C
7	E	37	C
8	D	38	D
9	E	39	A
10	D	40	E
11	D	41	A
12	B	42	B
13	C	43	D
14	B	44	B
15	A	45	C
16	B		
17	B		
18	C		
19	B		
20	B		
21	C		
22	D		
23	D		
24	D		
25	B		
26	D		
27	B		
28	B		
29	C		
30	E		