SOCIETY OF ACTUARIES

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JOINT BOARD FOR THE ENROLLMENT OF ACTUARIES

ENROLLED ACTUARIES PENSION EXAMINATION, SEGMENT A

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Data for Question 1 (1 point)

Consider the following statement:

Automatic approval is available for a change in funding method to unit credit for a cash balance plan under Rev. Proc. 2000-40.

Question 1

Is the above statement true or false?

(A) True

(B) False

Data for Question 2 (1 point)

A collectively bargained pension plan is amended effective on 1/1/2005 from $20 for each year of service to the following:

> $25 for each year of service for retirements in 2005
>
> $30 for each year of service for retirements after 2005

Consider the following statement:

The 2005 valuation must reflect the ultimate benefit level of $30 at retirement age if the retirement is after 2005.

Question 2

Is the above statement true or false?

(A) True

(B) False

Data for Question 3 (3 points)

Actuarial cost method: Unit credit.

The plan was amended effective 1/1/2005 to increase normal retirement benefits.

Normal retirement benefit:

Before 2005	\$30 per month for each year of service
After 2004	\$35 per month for each year of service

All participants are active and age 45 as of 1/1/2004.

Valuation interest rate: 7% per year.

Selected valuation results and funding standard account items as of 1/1/2004:

Accrued liability	\$4,000,000
Normal cost	315,000
Net amortization charge	100,000

There are no gains or losses in 2004.

There are no new entrants in 2004.

Credit balance in the funding standard account as of 12/31/2004: \$0.

No amortization charges or credits were fully amortized during 2004.

Question 3

In what range is the minimum required contribution for 2005 as of 12/31/2005?

(A) Less than \$515,000

(B) \$515,000 but less than \$565,000

(C) \$565,000 but less than \$615,000

(D) \$615,000 but less than \$665,000

(E) \$665,000 or more

Data for Question 4 (4 points)

Plan effective date: 1/1/2004.

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

Actuarial cost method: Unit credit.

Valuation interest rate:

Before 2005	7% per year
After 2004	6% per year

Credit balance in funding standard account as of 12/31/2004: \$0.

There have been no experience (gains)/losses.

Data for sole plan participant:

Date of birth	1/1/1954
Date of hire	1/1/1974

Selected annuity values:

Interest	$\ddot{a}_{65}^{(12)}$
6% per year	10.65
7% per year	9.87

Question 4

In what range is the minimum required contribution for 2005 as of 12/31/2005?

(A) Less than \$7,550

(B) \$7,550 but less than \$7,950

(C) \$7,950 but less than \$8,350

(D) \$8,350 but less than \$8,750

(E) \$8,750 or more

Data for Question 5 (3 points)

Actuarial cost method: Unit credit.

Valuation interest rate: 7% per year.

Credit balance in funding standard account as of 12/31/2004: $0.

Selected valuation results as of 1/1/2005:

Accrued liability	$500,000
Normal cost	60,000
Market value of assets	515,000
Actuarial value of assets	520,000
Expected benefit payments for the year	0
Net amortization charges	1,500

Current liability (including expected increase for benefits accruing during the year) as of 12/31/2005: $680,000.

Contributions made for the 2005 plan year:

Date paid	Amount
1/1/2005	$50,000
3/15/2006	1,000

Question 5

In what range is the remaining contribution as of 9/15/2006 to meet the minimum funding required for 2005?

(A) $0

(B) $1 but less than $4,000

(C) $4,000 but less than $8,000

(D) $8,000 but less than $12,000

(E) $12,000 or more

Data for Question 6 (4 points)

Valuation interest rate: 7% per year.

Actuarial value of assets:

Smoothed market value with a 3-year smoothing period as defined in Rev. Proc. 2000-40 without phase-in (smoothing of difference between expected and actual market value of assets).

Reconciliation of market value of assets:

	2002	2003	2004
Market value of assets as of 1/1	$5,000,000	$4,100,000	$3,600,000
Contributions	200,000	300,000	400,000
Benefit payments	300,000	300,000	300,000
Investment return	(800,000)	(500,000)	800,000
Market value of assets as of 12/31	4,100,000	3,600,000	4,500,000

Contributions and benefit payments are all made on 7/1 each plan year.

Question 6

In what range is the absolute value of the actuarial (gain)/loss during 2004 on the actuarial value of assets?

(A) Less than $200,000

(B) $200,000 but less than $400,000

(C) $400,000 but less than $600,000

(D) $600,000 but less than $800,000

(E) $800,000 or more

Data for Question 7 (3 points)

Plan effective date: 1/1/2000.

Actuarial cost method: Entry age normal.

The same actuarial cost method is used to value retirement and ancillary death benefits.

Death benefits are provided by whole life insurance.

Credit balance in funding standard account as of 12/31/2004: $0.

Selected valuation results as of 1/1/2005:

Actuarial (market) value of assets	$350,000
Present value of future benefits for active participants	250,000
Present value of benefits for inactive participants	400,000
Accrued liability	500,000

The following method changes are being considered for the 2005 valuation:

I. Changing the valuation date to December 31.

II. Changing to the one-year term method for valuing ancillary benefits.

III. Changing the actuarial cost method to level dollar individual aggregate.

Restrictions on automatic approval under Revenue Procedure 2000-40 that are not addressed in the above data do not apply.

Question 7

Which, if any, of the above change(s) is (are) eligible for automatic approval pursuant to Revenue Procedure 2000-40?

(A) None

(B) I only

(C) II only

(D) III only

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

Data for Question 8 (4 points)

Plan effective date: 1/1/2004.

Actuarial cost method: Unit credit.

Valuation interest rate:

Before 2005	7% per year
After 2004	8% per year

Selected valuation results:

	1/1/2004	1/1/2005
Interest rate	7%	8%
Accrued liability	$100,000	$140,000
Normal cost	50,000	40,000

Decrease in accrued liability due to the change in interest rate as of 1/1/2005: $30,000.

Contribution for 2004 made on 12/31/2004: $65,000.

Expected and actual benefit payments were $0.

Question 8

In what range is the minimum required contribution for 2005 as of 12/31/2005?

(A) Less than $40,000

(B) $40,000 but less than $43,000

(C) $43,000 but less than $46,000

(D) $46,000 but less than $49,000

(E) $49,000 or more

Data for Question 9 (3 points)

Plan effective date: 1/1/2001.

Actuarial cost method: Aggregate.

Valuation interest rate: 7% per year.

Minimum required contribution for 2004 as of 12/31/2004: $200,000.

Contributions made for the 2004 plan year:

Date	Amount
7/1/2004	$140,000
11/1/2004	45,000
6/30/2005	90,000

Selected valuation results as of 1/1/2005:

Actuarial (market) value of assets	$890,000
Present value of future benefits	1,200,000
Annual compensation	875,000
Present value of future compensation	15,312,500

Question 9

In what range is the normal cost for 2005 for minimum funding as of 12/31/2005?

(A) Less than $17,000

(B) $17,000 but less than $19,200

(C) $19,200 but less than $21,400

(D) $21,400 but less than $23,600

(E) $23,600 or more

Data for Question 10 (3 points)

Plan effective date: 1/1/1986.

Valuation interest rate: 7% per year.

Actuarial cost method: Entry age normal.

Selected valuation results and funding standard account items as of 1/1/2005:

Accrued liability	$1,000,000
Normal cost	25,000
Market value of assets	800,000
Actuarial value of assets	740,000
Contributions included in assets but not deducted	30,000
Minimum required contribution	40,000

Current liability (including expected increase for benefits accruing during the year) as of 12/31/2005: $1,306,000.

Expected benefit payments: $0.

The fresh start approach is used for purposes of IRC section 404.

Question 10

In what range is the deductible limit (including the carryover) for 2005?

(A) Less than $455,000

(B) $455,000 but less than $485,000

(C) $485,000 but less than $515,000

(D) $515,000 but less than $545,000

(E) $545,000 or more

Data for Question 11 (4 points)

Early retirement benefit: Accrued benefit reduced by 3% for each year by which commencement of payments precedes age 65; if service is 30 years or more, unreduced accrued benefit.

Valuation interest rate: 7% per year.

Selected valuation results for sole participant as of 1/1/2005:

Age x	Annual accrued benefit	$\ddot{a}_x^{(12)}$
60	\$12,000	11.59
61	\$13,500	11.41
62	\$15,000	11.23

The retirement assumption is changed as follows:

Age	Retirement rates prior to 2005	Retirement rates after 2004
60	100%	50%
61	0%	80%
62	0%	100%

No other pre-retirement decrements apply.

Data for sole active participant as of 1/1/2005:

Age 60
Service 28

The decrements are assumed to apply at the beginning of the year.

Question 11

In what range is the absolute value of the change in the present value of future benefits as of 1/1/2005 due to the change in retirement rates?

(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

Data for Question 12 (2 points)

Consider the following statements:

I. There is a 5% excise tax for single employer plans that fail to meet the minimum funding requirements.

II. There is a 15% excise tax on prohibited transactions. This excise tax may be increased to 100% if the prohibited transaction is not corrected.

III. There is a 50% excise tax on reversion of qualified plan assets, which may reduce to 20% under some circumstances if a qualified replacement plan or appropriate benefit increase is made.

Question 12

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.

Data for Question 13 (5 points)

Plan effective date: 1/1/1985.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 7% per year.

Current liability interest rate: 6% per year.

Credit balance in the funding standard account as of 12/31/2004: $30,000.

Initial accrued liability: $1,250,000.

Selected valuation results as of 1/1/2005:

Actuarial value of assets	$1,150,000
Market value of assets	1,200,000
Normal cost	75,000
Current liability	2,000,000
Expected increase in current liability due to benefits accruing during the plan year	85,000
Outstanding balance of unfunded old liability (2 years remaining)	50,000
Gateway percentage	65%

There were 140 participants on every day in 2004 and 145 participants as of 1/1/2005.

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

Min (30%, 30% - (FCL% - 60%) x 40%).

Question 13

In what range is the adjusted additional funding charge for 2005 as of 12/31/2005?

(A) Less than $150,000

(B) $150,000 but less than $160,000

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

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

(E) $180,000 or more

Data for Question 14 (4 points)

Valuation interest rate: 7% per year.

Retired participant data as of 1/1/2004:

	Smith	Jones	Brown
Date of birth	1/1/1939	1/1/1944	1/1/1944
Spouse date of birth	N/A	1/1/1949	N/A
Annual benefit payable at the beginning of the year	$60,000	$20,000	$30,000
Form of annuity payment	Life	Joint & 50% Survivor	Life

Selected annuity values payable annually at the beginning of the year:

x	Life
55	11.80
56	11.60
60	10.80
61	10.60
65	9.70
66	9.50

x:y	Joint & 50% Survivor
60:55	11.90
61:56	11.70

Both Smith and Jones died on 7/1/2004.

There were no other deaths or new retired participants during 2004.

Benefits are paid annually at the beginning of the year.

Question 14

In what range is the experience gain as of 1/1/2005 due to mortality for retired participants during 2004?

(A) Less than $520,000

(B) $520,000 but less than $570,000

(C) $570,000 but less than $620,000

(D) $620,000 but less than $670,000

(E) $670,000 or more

Data for Question 15 (2 points)

Consider the following statements regarding reasonable funding methods under 412 for non-collectively bargained single employer plans:

I. A reasonable funding method may anticipate plan amendments that become effective in a future plan year.

II. A reasonable funding method may anticipate future participants who are not employed on the plan valuation date.

III. A reasonable funding method may exclude non-vested liabilities.

Question 15

Which, if any, of the above 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.

Data for Question 16 (4 points)

Plan effective date: 1/1/2002.

Actuarial cost method: Projected unit credit.

Valuation interest rate: 7% per year.

Experience loss during 2002: $50,000.

Experience loss during 2003: $30,000.

Credit balance in the funding standard account as of 12/31/2003: $0.

Outstanding balance of the initial accrued liability as of 1/1/2004: $250,000.

A contribution equal to the minimum requirement for 2004 was made on 12/31/2004.

Selected valuation results as of 1/1/2005:

Normal cost	$95,000
Unfunded accrued liability	275,000

Question 16

In what range is the minimum required contribution for 2005 as of 12/31/2005?

(A) Less than $135,000

(B) $135,000 but less than $136,000

(C) $136,000 but less than $137,000

(D) $137,000 but less than $138,000

(E) $138,000 or more

Data for Question 17 (4 points)

Normal retirement benefit: $50 per month per year of service.

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

Preretirement death benefit: 50% of early retirement benefit, payable monthly to participant's spouse for life, commencing immediately after participant's death.

Selected actuarial assumptions:

Valuation interest rate	7% per year
Pre-retirement decrements other than death	None
Assumed retirement age	65
Marriage	85% of participants are married at time of death
Spousal age	Same as participant

Decrements are assumed to occur at the end of the year.

Data for participant Smith:

Date of birth	1/1/1942
Date of hire	1/1/1965

Selected post-retirement annuity values and pre-retirement mortality rates:

$\ddot{a}_{63}^{(12)} = 10.20 \qquad q_{63} = 0.05$

$\ddot{a}_{64}^{(12)} = 9.90 \qquad q_{64} = 0.05$

$\ddot{a}_{65}^{(12)} = 9.70$

Question 17

In what range is the present value of Smith's pre-retirement death benefits as of 1/1/2005?

(A) Less than $9,000

(B) $9,000 but less than $9,400

(C) $9,400 but less than $9,800

(D) $9,800 but less than $10,200

(E) $10,200 or more

Data for Question 18 (4 points)

Type of plan: Multiemployer plan.

Plan effective date: 1/1/2002.

Actuarial cost method: Unit credit.

Valuation rate of interest:

Before 2005	7.5% per year
After 2004	7.0% per year

There is one amortization charge amount of $10,000 in the 2004 funding standard account due to actuarial losses in 2003.

There was an actuarial loss of $300,000 during 2004.

Increases as of 1/1/2005 due to the change in interest rate:

Accrued liability	$100,000
Normal cost	20,000

Question 18

In what range is the increase in the minimum required contribution for 2005 as of 1/1/2005 due to the change in interest rate?

(A) Less than $27,000

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

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

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

(E) $33,000 or more

Data for Question 19 (4 points)

Plan effective date: 1/1/1984.

Normal retirement benefit: $50 per month for each year of service.

Actuarial cost method: Attained age normal.

Valuation interest rate: 7% per year.

Current liability interest rate: 6% per year.

Credit balance in the funding standard account as of 12/31/2004: $0.

Data for sole participant:

Date of birth	1/1/1950
Date of hire	1/1/1984

Actuarial (market) value of assets as of 1/1/2005: $70,000.

Selected annuity values:

	$\ddot{a}_{65}^{(12)}$
Using valuation assumptions	9.20
Using current liability assumptions	10.90

Question 19

In what range is the IRC section 412 full funding limit for 2005?

(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

Data for Question 20 (4 points)

Plan effective date: 1/1/1995.

Actuarial cost method: Aggregate.

Valuation interest rate: 8.5% per year.

Current liability interest rate: 6% per year.

Credit balance in funding standard account as of 12/31/2004: $300,000.

Selected valuation results as of 1/1/2005:

Normal cost	$150,000
Current liability	11,200,000
Expected increase in current liability due to benefits accruing during the plan year	100,000
Actuarial (market) value of assets	10,000,000
Expected benefit payments	0

There have always been 200 or more 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:

Min (30%, 30% - (FCL% - 60%) x 40%).

The plan is subject to the additional funding requirements in 2005 for the first time.

Question 20

In what range is the adjusted additional funding charge for 2005 as of 12/31/2005?

(A) Less than $250,000

(B) $250,000 but less than $290,000

(C) $290,000 but less than $330,000

(D) $330,000 but less than $370,000

(E) $370,000 or more

Data for Question 21 (3 points)

Plan effective date: 1/1/2005.

Normal retirement benefit: $1,000 per year.

Valuation interest rate: 7% per year.

Selected annuity factor:

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

Participant data:

	Date of birth	Date of hire
Smith	1/1/1975	1/1/2005
Jones	1/1/1941	1/1/2005

Consider the following statements:

I The individual level premium normal cost is equal to the normal cost under the aggregate cost method.

II The frozen initial liability normal cost is equal to the normal cost under the aggregate cost method.

III The individual aggregate normal cost is equal to the normal cost under the entry age normal cost method.

Question 21

Which, if any, of the above statement(s) is (are) true for 2005?

(A) I and II only

(B) I and III only

(C) II and III only

(D) I, II, and III

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

Data for Question 22 (5 points)

Plan effective date: 1/1/2004.

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

Actuarial cost method: Unit credit.

Valuation interest rate: 7% per year.

Credit balance in funding standard account as of 12/31/2004: $7,289.

Initial accrued liability: $8,265.

2004 plan year contribution made on 1/1/2004: $9,500.

Actuarial (market) value of assets as of 1/1/2005: $8,000.

Expected benefit payments: $0.

Participant data for sole plan participant:

Date of hire	1/1/2000
Status	Active on 1/1/2004 and 1/1/2005
Age	Less than age 65 at 1/1/2005

Selected annuity factor:

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

Question 22

In what range is the maximum tax deductible contribution for 2005?

(A) Less than $3,200

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

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

(D) $3,800 but less than $4,100

(E) $4,100 or more

Data for Question 23 (3 points)

Plan effective date: 1/1/2000.

Normal retirement benefit: 50% of final pay.

Actuarial cost method: Aggregate (level dollar), split funded.

Selected actuarial assumptions for side fund:

Valuation interest rate	7% per year
Compensation increases	3% per year
Pre-retirement decrements	None

Actuarial value of side fund as of 1/1/2005: $50,000.

Selected life insurance policy data as of 1/1/2005:

Annual premium	$4,000
Current value	15,000
Guaranteed age 65 value	150,000

Data for sole participant:

Date of birth	1/1/1970
Date of hire	1/1/2000
2004 annual compensation	$75,000

Selected annuity factor:

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

Question 23

In what range is the normal cost for the side fund for 2005 as of 1/1/2005?

(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 24 (4 points)

Plan effective date: 1/1/1995.

Normal retirement benefit: Annual benefit of $10,000, payable at the beginning of the year.

Retiree death benefit: Annual benefit of $5,000, payable at the beginning of the year to the surviving spouse, upon the death of the retiree.

Actuarial cost method: Unit credit.

Valuation interest rate: 7% per year.

Participant data for each of 100 retirees in the plan on 1/1/2004:

Date of birth	1/1/1939
Spouse date of birth	1/1/1942

Selected mortality rates and actuarial factors:

$\ddot{a}_{66:63}$	7.30
$\ddot{a}_{63}$	9.10
$\ddot{a}_{66}$	8.50
q_{62}	0.01
q_{65}	0.02

There are no new retirees during 2004 and there are no other plan participants.

Experience during 2004:

3 retirees die leaving their spouses alive
2 spouses die leaving the participant alive
10 retirees and their spouses die

Question 24

In what range is the mortality gain during 2004 as of 12/31/2004?

(A) Less than $850,000

(B) $850,000 but less than $900,000

(C) $900,000 but less than $950,000

(D) $950,000 but less than $1,000,000

(E) $1,000,000 or more

Data for Question 25 (4 points)

Plan effective date: 1/1/2004.

Normal retirement benefit: 1.5% of final compensation per year of service.

Actuarial cost method: Aggregate.

Actuarial assumptions:

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

Credit balance in funding standard account at 12/31/2004: $0.

Actuarial (market) value of assets at 1/1/2005: $62,000.

Data for sole plan participant as of 1/1/2005:

Date of birth	1/1/1955
Date of hire	1/1/2000
2004 compensation	$100,000

Selected actuarial factor:

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

Question 25

In what range is the minimum required contribution for 2005 as of 12/31/2005?

(A) Less than $3,500

(B) $3,500 but less than $6,500

(C) $6,500 but less than $9,500

(D) $9,500 but less than $12,500

(E) $12,500 or more

Data for Question 26 (5 points)

Plan effective date: 1/1/2003.

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

Actuarial cost method: Unit credit.

Valuation interest rate: 7% per year.

Data for sole plan participant:

Date of birth	1/1/1955
Date of hire	1/1/1993

Actuarial (market) value of assets at 1/1/2005: \$17,560.

All contributions for 2004 were made prior to 12/31/2004.

No contributions have been made for the 2005 plan year, prior to 7/15/2005.

There have been no gains or losses since plan inception.

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

The plan is subject to the quarterly contribution requirements for the 2005 plan year.

Question 26

In what range is the contribution needed to satisfy the quarterly contribution requirements on 7/15/2005?

(A) Less than \$350

(B) \$350 but less than \$700

(C) \$700 but less than \$1,050

(D) \$1,050 but less than \$1,400

(E) \$1,400 or more

Data for Question 27 (4 points)

Plan effective date: 1/1/2004.

Actuarial cost method: Unit credit.

Valuation interest rate: 7% per year.

Selected valuation results as of 1/1/2004:

Normal cost	$50,000
Actuarial liability	345,000

The contribution for 2004 was paid on 7/1/2004 in an amount equal to the deductible limit for 2004.

Selected valuation results as of 1/1/2005:

Normal cost	$50,000
Unfunded actuarial liability	265,000

Question 27

In what range is the minimum required contribution for 2005 as of 12/31/2005?

(A) Less than $40,000

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

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

(D) $50,000 but less than $55,000

(E) $55,000 or more

Data for Question 28 (4 points)

Plan effective date: 1/1/2004.

Actuarial cost method: Unit credit.

Valuation interest rate: 7% per year.

Selected valuation results as of 1/1/2004:

Normal cost	$60,000
Actuarial liability	400,000

Contribution for 2004: $100,000 made on 1/1/2004.

There were no benefit payments during 2004.

Selected valuation results as of 1/1/2005:

Normal cost	$60,000
Actuarial liability	460,000

The minimum required contribution as of 1/1/2005 is $70,000.

Question 28

In what range is the absolute value of the asset (gain)/loss during 2004?

(A) Less than $15,000

(B) $15,000 but less than $30,000

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

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

(E) $60,000 or more

Data for Question 29 (4 points)

Plan effective date: 1/1/1995.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 7% per year.

Actuarial value of assets:

Before 2005	Market value
After 2004	Average of market value and book value but not less than 80% or more than 120% of market value

Initial accrued liability: $400,000.

Credit balance in funding standard account as of 12/31/2004: $45,000.

Selected valuation results as of 1/1/2005:

Present value of future benefits	$2,000,000
Market value of assets	425,000
Book value of assets	640,000
Present value of future compensation	4,200,000
Valuation compensation	600,000

Question 29

In what range is the deductible limit for 2005?

(A) Less than $230,000

(B) $230,000 but less than $240,000

(C) $240,000 but less than $250,000

(D) $250,000 but less than $260,000

(E) $260,000 or more

Data for Question 30 (3 points)

Selected interest rates:

Valuation interest rate	7.00% per year
2004 current liability	6.55% per year
2005 current liability	6.00% per year

Credit balance in the funding standard account as of 12/31/2003: $0.

Selected data for 2004 as of 12/31/2004:

Minimum contribution excluding additional funding charge and interest on quarterly contribution	$95,000
Additional funding charge	12,000
Interest on late quarterly contributions	4,300

The minimum required contribution for 2004 was made 9/15/2005.

Selected data for 2005 as of 12/31/2005:

Minimum contribution excluding additional funding charge	$111,000
Additional funding charge	18,000

Question 30

In what range is the required quarterly contribution payable 4/15/2005?

(A) Less than $26,000

(B) $26,000 but less than $26,500

(C) $26,500 but less than $27,000

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

(E) $27,500 or more

Data for Question 31 (3 points)

Plan effective date: 1/1/2000.

Normal retirement benefit: 1% of final salary per year of service.

Actuarial cost method: Unit credit.

Selected actuarial assumptions:

Interest rate	7.0% per year
Salary increases	5.0% per year

Credit balance in the funding standard account as of 12/31/2004: $50,000.

Selected preliminary valuation results as of 1/1/2005:

Accrued liability for active participants	$830,000
Accrued liability for inactive participants	1,071,000
Normal cost	52,500
Net amortization charges	107,100
Total 2004 compensation	1,750,000

After the 2005 preliminary valuation was completed, the employer notified the actuary that each active participant's 2004 compensation was 6.0% higher than initially reported.

Question 31

In what range is the corrected 2005 minimum required contribution as of 12/31/2005?

(A) Less than $125,000

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

(C) $130,000 but less than $135,000

(D) $135,000 but less than $140,000

(E) $140,000 or more

Data for Question 32 (5 points)

Plan effective date: 1/1/1984.

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

Early retirement eligibility: 30 years of service.

Early retirement benefit: Unreduced accrued benefit payable for life, plus a $500 monthly Social Security supplement payable until age 65.

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Assumed rates of retirement:

Upon attaining 30 years of service	50% of participants are assumed to retire
Upon attaining age 65	100% of participants are assumed to retire

Selected participant data as of 1/1/2005:

	Age	Service
Smith	40	15
Jones	40	5

Selected annuity values:

$\ddot{a}_{65}^{(12)} = 9.70$ $\ddot{a}_{55}^{(12)} = 11.30$ $\ddot{a}_{55:\overline{10|}}^{(12)} = 7.00$

Question 32

In what range is the total actuarial accrued liability for Smith and Jones as of 1/1/2005?

(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

Data for Question 33 (4 points)

Plan effective date: 1/1/2004.

Actuarial cost method:

Before 2005	Entry age normal
After 2004	Unit credit

Valuation interest rate: 7% per year.

Selected valuation results:

Valuation date	1/1/2004	1/1/2005	1/1/2005
Actuarial cost method	Entry age normal	Entry age normal	Unit credit
Actuarial accrued liability	$1,200,000	$1,380,000	$1,225,000
Normal cost	39,000	43,000	48,000

Employer contribution for 2004: $145,000 made on 9/15/2005.

Benefit payments in 2004 and 2005: $0.

Question 33

In what range is the minimum required contribution for 2005 as of 12/31/2005?

(A) Less than $115,000

(B) $115,000 but less than $125,000

(C) $125,000 but less than $135,000

(D) $135,000 but less than $145,000

(E) $145,000 or more

Data for Question 34 (2 points)

Consider the following statements relating to approval for change in valuation software under Revenue Procedure 2000-40:

I. Automatic approval requires that a change in valuation software requiring approval was not made for the prior plan year.

II. Automatic approval requires that the net charge to the funding standard account for the current year under the new software does not differ from that using the old software by more than five percent (5%).

III. Automatic approval requires that the effect of the change is treated as an experience (gain)/loss, unless a change in assumptions is also adopted.

Question 34

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.

Data for Question 35 (3 points)

Plan effective date: 1/1/1998.

Plan year: 1/1 - 12/31.

Tax year: 7/1 - 6/30.

The deductible limit for a tax year uses valuation results for the plan year beginning in the tax year.

Actuarial cost method: Unit credit.

Valuation interest rate: 7% per year.

Carryover contribution for the taxable year ending 6/30/2004: $275,000.

Contribution for 2005 plan year: $110,000 made on 4/30/2005.

Selected valuation results as of 1/1/2005:

Normal cost	$225,000
Accrued liability	1,460,000
Actuarial (market) value of assets	1,720,000
Limit adjustment	0

Question 35

In what range is the carryover contribution for the taxable year ending 6/30/2005?

(A) Less than $150,000

(B) $150,000 but less than $155,000

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

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

(E) $165,000 or more

Data for Question 36 (4 points)

Plan effective date: 1/1/1976.

Actuarial cost method:

Before 2005	Entry age normal
After 2004	Unit credit

Valuation interest rate: 7% per year.

Credit balance in funding standard account as of 12/31/2004: $40,000.

Selected valuation results as of 1/1/2005:

Unit credit normal cost	$87,000
Unit credit accrued liability	1,100,000
Entry age accrued liability	1,300,000
Actuarial (market) value of assets	600,000

All outstanding amortization amounts in the funding standard account as of 1/1/2004:

Source of base	Date established	Amortization charges
Assumption change	1/1/1999	$50,000
Plan amendment	1/1/2001	30,000

Question 36

In what range is the minimum required contribution for 2005 as of 12/31/2005?

(A) Less than $110,000

(B) $110,000 but less than $130,000

(C) $130,000 but less than $150,000

(D) $150,000 but less than $170,000

(E) $170,000 or more

Data for Question 37 (4 points)

Type of plan: Multiemployer.

Actuarial cost method:

Before 2005	Entry age normal
After 2004	Unit credit

Valuation interest rate: 7% per year.

Credit balance in funding standard account as of 12/31/2004: $40,000.

Selected valuation results as of January 1, 2005:

Funding method	Normal cost	Unfunded accrued liability
Entry age normal	$55,000	$1,000,000
Unit credit	80,000	650,000

January 1, 2005 amortization charges (credits) for all amortization bases in the funding standard account that were established prior to this date.

Type of base	Date established	Amortization amount
Initial accrued liability	1/1/1995	$50,000
Change in assumptions	1/1/2000	20,000

Question 37

In what range is the minimum required contribution for 2005 as of 12/31/2005?

(A) Less than $70,000

(B) $70,000 but less than $90,000

(C) $90,000 but less than $110,000

(D) $110,000 but less than $130,000

(E) $130,000 or more

Data for Question 38 (4 points)

Plan effective date: 1/1/2004.

Actuarial cost method: Aggregate.

Valuation interest rate: 7% per year.

Present value of projected benefits as of 1/1/2004: $350,000.

Waived funding deficiency approved for 2004: $10,000.

Contribution for the 2004 plan year: $20,000 made on 1/1/2004.

Rate of return on plan investments during 2004: 20%.

Benefit payments made during 2004: $0.

Present value of projected benefits as of 1/1/2005: $365,000.

Date of birth for sole participant: 1/1/1954.

Question 38

In what range is the normal cost as of 1/1/2005?

(A) Less than $34,700

(B) $34,700 but less than $35,700

(C) $35,700 but less than $36,700

(D) $36,700 but less than $37,700

(E) $37,700 or more

Data for Question 39 (3 points)

Plan effective date: 1/1/1996.

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Credit balance in funding standard account as of 12/31/2004: $5,000.

Normal cost as of 1/1/2005: $25,000.

Summary of the only outstanding bases (all charges) in the funding standard account as of 1/1/2005:

Type of base	Effective date	Outstanding balance
Assumption change	1/1/1997	$40,000
Funding method change	1/1/2003	100,000
Experience loss	1/1/2005	50,000

Question 39

In what range is the minimum required contribution for 2005 as of 12/31/2005?

(A) Less than $60,000

(B) $60,000 but less than $65,000

(C) $65,000 but less than $70,000

(D) $70,000 but less than $75,000

(E) $75,000 or more

Data for Question 40 (3 points)

Plan effective date: 1/1/2005.

Normal retirement benefit: $1,000 per year of service, paid annually at the end of the year.

Selected valuation assumptions:

Valuation interest rate	7% per year
Assumed entry age	Age at hire

Data for sole participant:

Date of birth	1/1/1974
Date of hire	1/1/1995

Selected annuity value:

$a_{65} = 9.24$

X = the minimum required contribution as of 12/31/2005 using the aggregate actuarial cost method.

Y = the minimum required contribution as of 12/31/2005 using the entry age normal actuarial cost method.

Z = the minimum required contribution as of 12/31/2005 using the attained age normal actuarial cost method.

Question 40

Which of the following statements is true?

(A) X > Y > Z

(B) Y > Z > X

(C) Z > Y > X

(D) Y > X > Z

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

Data for Question 41 (4 points)

Plan effective date: 1/1/2001.

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Initial unfunded accrued liability: $400,000.

The accumulated reconciliation account as of 1/1/2004: $0.

Additional funding charge for 2004 as of 12/31/2004: $40,000.

Credit balance in funding standard account as of 12/31/2004: $12,000.

Selected valuation results as of 1/1/2005:

Normal cost	$65,000
Accrued liability	2,200,000
Actuarial (market) value of assets	1,800,000

The plan had no experience (gains)/losses prior to 2004.

For all plan years prior to 2004, the plan sponsor contributed the minimum required contribution to the plan.

Question 41

In what range is the deductible limit for 2005?

(A) Less than $105,000

(B) $105,000 but less than $115,000

(C) $115,000 but less than $125,000

(D) $125,000 but less than $135,000

(E) $135,000 or more

Data for Question 42 (4 points)

Plan effective date: 1/1/2004.

Normal retirement benefit: 1.5% 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

Accrued liability as of 1/1/2004: $45,136.

Contribution for 2004: $11,500 made on 12/31/2004.

Data for sole participant:

Date of birth	1/1/1951
Date of hire	1/1/1996
2003 compensation	$55,000
2004 compensation	$55,000

Selected annuity value:

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

Question 42

In what range is the minimum required contribution for 2005 as of 1/1/2005?

(A) Less than $6,500

(B) $6,500 but less than $7,000

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

(D) $7,500 but less than $8,000

(E) $8,000 or more

Data for Question 43 (2 points)

Employee contributions: Mandatory.

Selected data for participant Smith as of 1/1/2005:

Date of birth	1/1/1940
Date of retirement	1/1/2005
Annual accrued benefit	$4,000
Employee contributions without interest	12,000
Accumulated contributions with interest	20,000

Selected annuity values:

Based on IRC section 417(e)(3)	$\ddot{a}_{65}^{(12)} = 8.50$
Based on plan provisions	$\ddot{a}_{65}^{(12)} = 7.90$

Question 43

In what range is the employer-provided benefit for participant Smith as of 1/1/2005?

(A) Less than $1,000

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

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

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

(E) $2,500 or more

Data for Question 44 (3 points)

Actuarial cost method: Unit credit.

Valuation interest rate: 7% per year.

2004 maximum deductible contribution: $100,000.

2004 plan year contribution: $150,000.

Selected valuation results as of 1/1/2005:

Normal cost	$75,000
Accrued liability	1,000,000
Actuarial (market) value of assets	900,000
Expected benefit payments for the year	0

Current liability (including expected increases for benefits accruing during the year) as of 12/31/2005: $1,250,000.

Question 44

In what range is the IRC section 404 full funding limitation for 2005?

(A) Less than $180,000

(B) $180,000 but less than $220,000

(C) $220,000 but less than $260,000

(D) $260,000 but less than $300,000

(E) $300,000 or more

Data for Question 45 (4 points)

Normal retirement benefit: 1% of final compensation for each year of service.

Early retirement eligibility: Age 55.

Early retirement benefit: Accrued benefit reduced by 5% for each year by which the benefit commencement date precedes age 65.

Actuarial cost method: Unit credit.

Selected actuarial assumptions:

Valuation interest rate	7% per year
Compensation increases	0% per year
Retirement age	65

Selected participant data:

	Smith	Jones
Date of birth	1/1/1955	1/1/1950
Date of hire	1/1/1990	1/1/1985
2003 compensation	\$ 50,000	\$ 75,000
2004 compensation	60,000	80,000

Selected annuity values:

$\ddot{a}_{55}^{(12)} = 10.50$ $\ddot{a}_{65}^{(12)} = 8.50$

Smith and Jones are active participants on 1/1/2004. Jones retired on 12/31/2004.

Question 45

In what range is the absolute value of the (gain)/loss for Smith and Jones during 2004, due to compensation and retirement?

(A) Less than \$12,000

(B) \$12,000 but less than \$16,000

(C) \$16,000 but less than \$20,000

(D) \$20,000 but less than \$24,000

(E) \$24,000 or more

Data for Question 46 (3 points)

The plan was amended effective 1/1/2005, to increase normal retirement benefits.

Normal retirement benefit:

Before 2005	\$25 per month per year of service
After 2004	\$30 per month per year of service

Actuarial cost method: Unit credit.

Valuation interest rate: 7% per year.

Selected valuation results as of 1/1/2005 prior to plan amendment:

Accrued liability	\$6,500,000
Normal cost	350,000
Net amortization amount	350,000

All participants are active as of 1/1/2005.

Question 46

In what range is the increase in the minimum required contribution as of 12/31/2005 due to the plan amendment?

(A) Less than \$75,000

(B) \$75,000 but less than \$125,000

(C) \$125,000 but less than \$175,000

(D) \$175,000 but less than \$225,000

(E) \$225,000 or more

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