SOCIETY OF ACTUARIES

AMERICAN SOCIETY OF PENSION ACTUARIES

JOINT BOARD FOR THE ENROLLMENT OF ACTUARIES

NOVEMBER 1995 COURSE P-365U (EA2)

JOINT BOARD BASIC EXAMINATION

This is the November 1995 examination which has been released to the public by the administering organizations.

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Conditions Generally Applicable
to All EA-2 Examination Questions

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

General Conditions Regarding Plan Provisions

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

(2) The plan is qualified under Code section 401. Thus, for example, any benefit formulas should be understood to be limited by other plan provisions required by the Code.

(3) The plan is sponsored by a single employer; the sponsoring employer is not a member of a controlled group.

(4) The plan is not collectively bargained.

(5) The plan year, the employer's limitation year, and the employer's taxable year are all the calendar year.

(6) The normal retirement age is 65.

(7) Retirement pensions commence at normal retirement age and are paid monthly for life at the beginning of each month.

(8) The plan covers all active employees of the employer; there is no age or service requirement for participation. Thus, when referring to active employees, the terms "employee" and "participant" are synonymous.

(9) There are no mandatory or voluntary employee contributions.

(10) Service for purposes of vesting and benefit accrual is credited on the basis of time elapsed since date of hire.

(11) When the normal retirement benefit is computed as a dollar amount, or as a percentage of compensation, for each year of service, the accrued benefit is defined likewise.

(12) Actuarial equivalence is based on the mortality table and interest rate assumed for funding purposes.

(13) Qualified joint and survivor annuities and qualified preretirement survivor annuities are provided in such manner that they result in no cost to the employer.

(14) The plan has not been top-heavy in any year.

(15) The plan has not been amended since its effective date.

General Conditions Regarding Funding

(16) Any actuarial valuation encompasses not only all active employees but also retired employees, beneficiaries, and former employees entitled to vested deferred pensions.

(17) The valuation date is the first day of the plan year; i.e., participant data, present values, asset values, etc. are as of that date. Also, normal costs are payable annually, the first being due on the valuation date.

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

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

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

accrued liability due to the change. Likewise, under the attained age normal method, the unfunded liability is adjusted by adding to it the increase in the unfunded unit credit accrued liability.

(21) The terms "actuarial value of assets" and "market value of assets" mean the values developed for purposes of Code section 412, before being adjusted as required under funding methods of the aggregate type for items such as the existing credit balance or the outstanding balances of certain bases.

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

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

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

(25) The term "minimum required contribution" means the smallest contribution for a plan year which will prevent a funding deficiency at the end of that plan year, without regard to the alternative minimum funding standard account. Amounts to be amortized are not combined or offset against one another.

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

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

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

(29) The employer is taxable, and all employer contributions for each prior plan year have been deducted by the employer for its taxable year coincident with such plan year.

(30) For purposes of determining the deductible limit for any year, the employer has never elected the fresh-start alternative or combined amortization bases.

(31) The full funding limitation has never applied.

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

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

Miscellaneous General Conditions

(34) All plan provisions and funding comply with all temporary and final regulations under the Internal Revenue Code and ERISA, as amended through June 30, 1995.

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

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

Conditions Specially Applicable to All 1995 EA-2 Examination Questions

(1) The deficit reduction contribution requirement shall be disregarded unless there is specific reference to such requirement.

(2) The quarterly contribution requirement shall be disregarded unless there is specific reference to such requirement.

(3) The full funding limitation based on 90% or 150% of the current liability shall be disregarded unless the current liability(ies) is (are) provided.

(4) For purposes of determining the deductible limit, the unfunded current liability shall be disregarded unless the current liability is provided.

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

1995

Data for Question 1 (1 point)

Consider the following statement:

A plan is deemed nondiscriminatory if its benefit formula meets the permitted disparity requirements of IRC section 401(l) and the regulations thereunder.

Question 1

Is the above statement true or false?

(A) True

(B) False

Data for Question 2 (1 point)

Consider the following statement:

A reportable event occurs if at least 3% of the benefit liability of a PBGC-covered plan is transferred within a 12-month period to a plan maintained by an employer who is not a member of the plan sponsor's controlled group.

Question 2

Is the above statement true or false?

(A) True

(B) False

Data for Question 3 (1 point)

Consider the following statement:

> A qualified plan covering only a self-employed person is exempt from the requirements of Title I of ERISA.

Question 3

Is the above statement true or false?

(A) True

(B) False

Data for Question 4 (1 point)

Consider the following statement:

> In order to facilitate a standard termination, any highly compensated employee may agree to forego receipt of all or any portion of his benefit.

Question 4

Is the above statement true or false?

(A) True

(B) False

Data for Question 5 (1 point)

Consider the following statement:

> A qualified plan's benefit formula need not be in compliance with IRC section 401(a)(4) benefits, rights, and features if it passes IRC section 401(a)(4) amounts testing for nondiscrimination.

Question 5

Is the above statement true or false?

(A) True

(B) False

Data for Question 6 (1 point)

Consider the following statement:

A trust will remain a qualified trust if the plan permits a former spouse to collect past due and unpaid alimony payments from the trust, without the participant's approval, if the former spouse can prove to the plan administrator that the payments are due and unpaid.

Question 6

Is the above statement true or false?

(A) True

(B) False

Data for Question 7 (1 point)

Consider the following statement:

A qualified plan must pass the 70% ratio percentage test and the average benefits test to meet the minimum coverage requirements of IRC section 410(b).

Question 7

Is the above statement true or false?

(A) True

(B) False

Data for Question 8 (1 point)

Consider the following statement:

A qualified plan covering only a self-employed person is exempt from prohibited transaction rules.

Question 8

Is the above statement true or false?

(A) True

(B) False

1995

Data for Question 9 (4 points)

Plan effective date: 1/1/89.

Actuarial cost method:

Before 1993: Entry age normal.
After 1992: Unit credit.

Valuation interest rate: 7% per year.

Credit balance in funding standard account as of 12/31/94: $29,624.

Outstanding balances of all amortization bases in funding standard account for 1994 as of 1/1/95:

Initial accrued liability	$500,000
Experience gain in 1990	13,652
Experience loss in 1992	7,600
Change in actuarial cost method (credit base)	63,250

Selected valuation results as of 1/1/95:

Normal cost as of 1/1	$ 53,000
Accrued liability	768,950
Actuarial (market) value of assets	330,000

Question 9

In what range is the minimum required contribution for 1995 payable 12/31/95?

(A) Less than $49,000

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

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

(D) $57,000 but less than $61,000

(E) $61,000 or more

1995

Data for Question 10 (4 points)

Plan effective date: 1/1/77.

Preretirement death benefit: None.

Interest rate specified in plan for actuarial equivalence: 7% per year.

Data for participant Smith:

Date of birth	1/1/40
Date of hire	1/1/80
Date of retirement	1/1/95
Spouse's date of birth	1/1/40
Annual accrued benefit payable as a qualified 50% joint and survivor annuity	$51,000

Defined benefit dollar limitation under IRC section 415 for 1995: $120,000.

Selected commutation functions and annuity values for actuarial equivalence:

Age	$N_x^{(12)}$	$\ddot{a}_x^{(12)}$	$\ddot{a}_{x:x}^{(12)}$
55	9,899	11.8	10.6
62	5,284	10.5	9.0
65	3,934	9.9	8.3
66	3,549	9.6	8.0

Question 10

In what range is the maximum benefit payable to Smith in 1995?

(A) Less than $47,000

(B) $47,000 but less than $47,500

(C) $47,500 but less than $48,000

(D) $48,000 but less than $48,500

(E) $48,500 or more

1995

Data for Question 11 (4 points)

Valuation interest rate: 7% per year.

175% of applicable mid-term federal rate for January, 1995: 14.06% per year.

Selected valuation results and funding standard account items:

	1/1/94	1/1/95
Normal cost as of 1/1	$10,000	$12,000
Credit balance as of 1/1	10,000	12,450
Net amortization charges as of 1/1	15,000	15,000

All contributions for 1994 were paid before 12/31/94.

No contributions for 1995 were paid before 9/15/96.

Question 11

In what range is the additional interest charge due to late quarterly contributions for 1995?

(A) Less than $900

(B) $900 but less than $1,000

(C) $1,000 but less than $1,100

(D) $1,100 but less than $1,200

(E) $1,200 or more

Data for Question 12 (4 points)

Plan effective date: 1/1/91.

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

Mandatory employee contributions: 4% of compensation, made on 12/31.

Vesting eligibility: 3 to 7 year graded vesting in 20% increments from date of hire.

Actuarial equivalence:

Interest rate: PBGC rates used for determining lump sum payments on a termination basis.
Mortality: Preretirement: None.
Postretirement: UP 1984 mortality table.

The plan has not been amended to change the basis for determining lump sum payments under IRC section 417(e)(3).

Data for participant Smith:

Date of birth	1/1/35
Date of hire	1/1/89
Date of termination	12/31/94
Annual compensation	$60,000 each year since 1989

120% of applicable federal mid-term rate for:

January, 1991:	9.78% per year	January, 1994:	6.40% per year
January, 1992:	8.10% per year	January, 1995:	9.54% per year
January, 1993:	7.63% per year		

PBGC immediate interest rate as of 1/1/95: 6.00% per year.

PBGC first-tier deferred (k1) interest rate as of 1/1/95: 5.25% per year.

Selected annuity values based on UP 1984 mortality table:

	6.00%	7.20%
$\ddot{a}^{(12)}_{65}$	9.35	8.62

Question 12

In what range is Smith's vested annual accrued benefit as of 1/1/95?

(A) Less than $4,100
(B) $4,100 but less than $4,115
(C) $4,115 but less than $4,130
(D) $4,130 but less than $4,145
(E) $4,145 or more

Data for Question 13 (4 points) 1995

Actuarial cost method: Projected unit credit.

Valuation interest rate: 7% per year.

Credit balance in funding standard account as of 12/31/94: $2,000.

Selected valuation results as of 1/1/95:

Normal cost as of 1/1	$ 10,000
Accrued liability	210,000
Actuarial (market) value of assets	180,000

Selected valuation results projected to 12/31/95:

Current liability	$198,500
Actuarial (market) value of assets	183,000

There have always been over 100 participants in the plan.

A full funding credit (due entirely to the full funding limitation prior to reflecting the 150% of current liability component) was used in the funding standard account for 1994.

Additional funding charge for 1995: $0.

Additional interest charge for 1995: $0.

The contribution for 1995 is paid on 12/31/95.

Question 13

In what range is the deductible limit for 1995?

(A) Less than $14,500

(B) $14,500 but less than $15,000

(C) $15,000 but less than $15,500

(D) $15,500 but less than $16,000

(E) $16,000 or more

1995

Data for Question 14 (4 points)

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Current liability interest rate: 7% per year.

Credit balance in funding standard account as of 12/31/93: $0.

Accumulated reconciliation account balance in funding standard account as of 12/31/93: $0.

Selected valuation results and funding standard account items:

	1/1/94	1/1/95
Normal cost as of 1/1	$ 50,000	$ 52,000
Accrued liability	300,000	374,500
Actuarial (market) value of assets	40,000	109,000
Current liability projected to 12/31	75,000	110,000
Net amortization charges as of 1/1	10,000	10,000

Additional interest charge due to late quarterly contributions for 1994 as of 12/31/94: $2,000.

Expected benefit payments for 1994 and 1995: $0.

175% of applicable mid-term federal rate for January, 1995: 14.06% per year.

The contributions for 1994 and 1995 were paid on 12/31/94 and 12/31/95 in amounts equal to the minimum required contributions for 1994 and 1995.

The plan has always covered fewer than 100 participants, and the plan sponsor is required to make minimum quarterly contributions.

Question 14

In what range is the accumulated reconciliation account balance in the funding standard account as of 12/31/95?

(A) Less than $3,000

(B) $3,000 but less than $3,150

(C) $3,150 but less than $3,300

(D) $3,300 but less than $3,450

(E) $3,450 or more

1995

Data for Question 15 (4 points)

As of 12/31/95, Plan A is split into Plans B and C. The sponsors of Plans B and C are members of the same controlled group of corporations.

Liability component of full funding limitation for Plan A as of 12/31/95:

Attributable to Plan B participants	$150,000
Attributable to Plan C participants	250,000

Credit balance in funding standard account for Plan A as of 12/31/95: $75,000.

Present value of accrued benefits on a termination basis as of 12/31/95:

Plan B	$100,000
Plan C	200,000
Total	300,000

Actuarial (market) value of assets in Plan A as of 12/31/95: $500,000.

Question 15

In what range is the credit balance in the funding standard account for Plan C as of 1/1/96?

(A) Less than $40,500

(B) $40,500 but less than $44,500

(C) $44,500 but less than $48,500

(D) $48,500 but less than $52,500

(E) $52,500 or more

1995

Data for Question 16 (4 points)

Consider the following statements regarding top-heavy determinations:

I. The actuarial assumptions used for calculating the present value of accrued benefits when making a top-heavy determination must be the same as the actuarial equivalent assumptions used to determine optional forms of payment.

II. For a plan which only covers employees pursuant to a collective bargaining agreement, the plan sponsor is not required to provide the minimum top-heavy benefit.

III. Death benefits paid in excess of the present value of accrued benefits determined immediately prior to the date of death are not treated as distributions in the determination of a plan's top-heavy status.

Question 16

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

(A) I and II only

(B) I and III only

(C) II and III only

(D) I, II, and III

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

1995

Data for Question 17 (4 points)

Money purchase plan provisions:

Plan effective date: 1/1/95.
Employer contributions: 20% of compensation, paid on 12/31.

Defined benefit plan provisions:

Plan effective date: 1/1/92.
Normal retirement benefit: 10% of final 5-year average compensation for each year of service.
Early retirement eligibility: Age 62 with 5 years of service.
Early retirement benefit: Unreduced accrued benefit payable at early retirement.

Benefits from the defined benefit plan will be reduced first if benefits and contributions would otherwise exceed the combined limits of IRC section 415(e).

The defined contribution fraction is projected to the assumed retirement age.

Assumed retirement age: Age at earliest retirement eligibility.

Assumed compensation increases: None.

Top-heavy ratio for 1995: 75%.

Valuation data for employee Smith:

Date of birth	1/1/38
Date of hire	1/1/92
Compensation:	
1992	$ 80,000
1993	90,000
1994	100,000

Defined benefit dollar limitation under IRC section 415 for 1995: $120,000.

Question 17

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 1995?

(A) Less than $52,000

(B) $52,000 but less than $56,000

(C) $56,000 but less than $60,000

(D) $60,000 but less than $64,000

(E) $64,000 or more

1995

Data for Question 18 (4 points)

Selected treasury security rates and actuarial assumptions:

	1/1/93	1/1/95
4-year weighted average of 30-year treasury security rates	8.07%	7.26%
110% of 4-year weighted average of 30-year treasury security rates	8.88%	7.99%
109% of 4-year weighted average of 30-year treasury security rates	8.80%	7.91%
Interest rate used to calculate current liability under IRC section 412(l)	8.88%	7.91%
Mortality table used to calculate current liability	UP 1984	1983 GAM

Current liabilities as of 1/1/95:

	Mortality Table	
Interest Rate	UP 1984	1983 GAM
7.91%	$910,000	$1,000,000
7.99%	890,000	980,000
8.88%	810,000	895,000

The sponsor has not elected to use the optional rule for determining the additional unfunded old liability.

Question 18

In what range is the additional unfunded old liability amortization amount for 1995 as of 1/1/95?

(A) Less than $9,000

(B) $9,000 but less than $13,000

(C) $13,000 but less than $17,000

(D) $17,000 but less than $21,000

(E) $21,000 or more

1995

Data for Question 19 (4 points)

Normal retirement benefit:	The sum of 1.5% of final 3-year average compensation for each year of service, plus X% of final 3-year average compensation in excess of Social Security covered compensation for each year of service up to 35 years.
Earliest retirement age:	60.
Early retirement reduction:	0.5% for each month by which the benefit commencement date precedes the normal retirement date. Unreduced benefits are available at age 62 if the participant has 30 years of service.
Normal form of payment:	Life annuity with 5 years certain.
Optional form of payment:	Life annuity.

Factors to convert benefit from a life annuity with 5 years certain to a life annuity:

1.0275 - [.0025 * (65 - age at commencement)]

Disability benefit: None.

Unadjusted permitted disparity factors under IRC section 401(1) 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

Question 19

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

(A) Less than 0.50%

(B) 0.50% but less than 0.55%

(C) 0.55% but less than 0.60%

(D) 0.60% but less than 0.65%

(E) 0.65% or more

1995

Data for Question 20 (4 points)

Plan effective date: 1/1/94.

Normal retirement benefit:

Effective 1/1/94: 50% of final 5-year average compensation.
Effective 1/1/95: 50% of final 3-year average compensation.

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Selected valuation results:

	1/1/94	1/1/95 (After Amendment)
Normal cost as of 1/1	$ 65,000	$ 98,000
Accrued liability	285,000	565,000
Actuarial (market) value of assets	0	103,000

Increase in accrued liability as of 1/1/95 due to plan amendment: $140,000.

Contribution for 1994: $100,000 paid on 9/30/94.

There have never been any inactive participants.

Question 20

In what range is the minimum required contribution for 1995 payable 12/31/95?

(A) Less than $130,500

(B) $130,500 but less than $135,500

(C) $135,500 but less than $140,500

(D) $140,500 but less than $145,500

(E) $145,500 or more

Data for Question 21 (4 points)

Plan effective date: 1/1/90.

Plan termination date: 12/31/95.

Normal retirement benefit:

Effective 1/1/90: $25 per month for each year of service.
Effective 1/1/94: $33 per month for each year of service.

Early retirement benefit: None.

Vesting eligibility: 100% after 3 years of service.

Participant data as of 12/31/95:

	Smith	Brown
Date of birth	1/1/30	1/1/50
Date of hire	1/1/60	1/1/90
Date of participation	1/1/90	1/1/91
Ownership	95%	5%
Status	Active	Active

Question 21

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

(A) Less than $285

(B) $285 but less than $385

(C) $385 but less than $485

(D) $485 but less than $585

(E) $585 or more

1995

Data for Question 22 (4 points)

Plan effective date: 1/1/87.

Plan year: Calendar year.

Plan sponsor's tax year: 4/1 - 3/31.

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

Actuarial cost method: Attained age normal.

Valuation interest rate: 7% per year.

Assumed retirement age: 65.

Initial accrued liability: $490,000.

Selected valuation results as of 1/1/95:

Present value of future benefits	$900,000
Actuarial value of assets	700,000
Present value of future working lifetime of active participants	1,500
Number of active participants under age 65	250

The contribution for each plan year is paid on 3/31 of that plan year in an amount equal to the deductible limit for the tax year ending in that plan year.

Question 22

In what range is the deductible limit for the tax year ending 3/31/95?

(A) Less than $76,000

(B) $76,000 but less than $79,000

(C) $79,000 but less than $82,000

(D) $82,000 but less than $85,000

(E) $85,000 or more

1995

Data for Question 23 (4 points)

An employer has maintained a defined benefit plan and a defined contribution plan for its employees since 1/1/84.

Normal retirement benefit: $75 per month for each year of service.

The minimum top-heavy benefit is payable solely from the defined benefit plan in an amount such that the 125% factor can be used in determining the IRC section 415(e) fraction.

Actuarial cost method: Projected unit credit.

Actuarial assumptions:

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

Top-heavy ratio for each year since 1/1/84: 65%.

Valuation data for non-key employee Smith as of 1/1/95:

Date of birth	1/1/40
Date of hire	1/1/84
1994 compensation	$40,000

Smith's compensation has remained constant throughout his employment.

Smith is not affected by any IRC section 415 limitations.

Selected annuity factor on the valuation basis:

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

Question 23

In what range is Smith's accrued liability as of 1/1/95?

(A) Less than $41,000

(B) $41,000 but less than $48,000

(C) $48,000 but less than $55,000

(D) $55,000 but less than $62,000

(E) $62,000 or more

Data for Question 24 (4 points)

Consider the following statements regarding benefits, rights and features:

I. A permanent plan provision offering a lump sum payment after a participant attains age 55 and completes 10 years of service would not be considered currently available to the participant unless those eligibility requirements have currently been satisfied.

II. A subsidized optional form of payment is considered to be a uniform subsidy if it is currently available to substantially all plan participants.

III. A benefit, right, or feature is considered nondiscriminatory if it satisfies either the current availability requirements or the effective availability requirements of IRC section 401(a)(4).

Question 24

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

(A) I only

(B) II only

(C) I and III only

(D) II and III only

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

1995

Data for Question 25 (4 points)

Plan effective date: 1/1/90.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 7% per year.

Initial accrued liability: $900,000.

Initial amount of charge base due to 150% of current liability full funding limitation:

For 1993:	$15,000
For 1994:	5,000

Credit balance in funding standard account as of 12/31/94: $100,000.

Normal cost for 1995 as of 1/1/95: $120,000.

The contribution for 1995 was paid on 1/1/95 in an amount equal to the deductible limit for 1995.

Question 25

In what range is the credit balance in the funding standard account as of 12/31/95?

(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

1995

Data for Question 26 (4 points)

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

Profit-sharing / 401(k) plan effective date: 1/1/92.

Employer's profit-sharing contribution: 10% of total compensation (total compensation includes 401(k) deferrals).

Employer's matching contribution: 100% of 401(k) deferrals.

Benefits from the defined benefit plan will be reduced first if benefits and contributions would otherwise exceed the combined limits of IRC section 415(e).

Data for employee Smith:

Date of birth	1/1/30
Date of hire	1/1/91
Date of retirement	1/1/95
Annual retirement benefit	$50,000
Annual compensation:	

Year	Total Compensation	401(k) Deferrals
1991	$ 90,000	$ 0
1992	100,000	5,000
1993	110,000	5,500
1994	115,000	5,750

Total deferrals and employer contributions to the 401(k) plan for all participants were less than 15% of compensation.

Top-heavy ratio for 1990 through 1994: 20%.

Defined benefit dollar limitation under IRC section 415 for 1995: $120,000.

Question 26

In what range is the maximum benefit payable to Smith from the defined benefit plan in 1995?

(A) Less than $23,000

(B) $23,000 but less than $27,000

(C) $27,000 but less than $31,000

(D) $31,000 but less than $35,000

(E) $35,000 or more

Data for Question 27 (4 points)

1995

Consider the following benefit formulas:

I. 0.75% of compensation for each of the first 10 years of service, plus 1.25% of compensation for each of the next 20 years of service.

II. $300 per year for each of the first 10 years of service, plus $450 per year for each of the next 10 years of service.

III. 0.75% of compensation for each of the first 10 years of service, plus 1.00% of compensation for each of the next 10 years of service, plus 1.25% of compensation for each of the next 10 years of service.

Question 27

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

(A) I only

(B) II only

(C) II and III only

(D) I, II, and III

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

Data for Question 28 (4 points)

1995

Plan effective date: 1/1/92.

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Initial accrued liability: $150,300.

Selected valuation results:

	1/1/94	1/1/95
Normal cost as of 1/1	$ 15,000	$17,000
Unfunded accrued liability for purposes of IRC section 412	100,000	90,000

There were no experience gains and losses before 1994.

All contributions paid for 1993 were deducted for 1993.

Contribution for 1994: $70,000 paid on 4/1/94.

Question 28

In what range is the maximum contribution which can be paid on 12/31/95 without exceeding the deductible limit for 1995?

(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

1995

Data for Question 29 (4 points)

Plan effective date: 1/1/85.

Plan termination date: 6/30/95.

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

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

PBGC maximum monthly guaranteed benefit as of 1/1/95: $2,573.86.

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

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

Effective 1/1/93, the plan was amended to provide the following postretirement cost-of-living increases (to be applied to the prior year's benefit):.

1/1/93 increase:	3.0%
1/1/94 increase:	2.0%
1/1/95 increase:	3.0%

Data for participant Smith:

Date of birth	7/1/31
Date of retirement	7/1/92
Final average compensation	$54,000
Total years of service	30
Form of payment	Life annuity

Question 29

In what range is Smith's PBGC guaranteed monthly benefit payable 7/1/95?

(A) Less than $2,130

(B) $2,130 but less than $2,200

(C) $2,200 but less than $2,270

(D) $2,270 but less than $2,340

(E) $2,340 or more

1995

Data for Question 30 (4 points)

Plan effective date: 1/1/89.

Normal retirement benefit: 1.5% of highest 5-year average compensation minus 0.75% of final 3-year average compensation for each year of service up to 35 years. Final 3-year average compensation is not limited to highest 5-year average compensation, but is limited to covered compensation. The offset portion of the benefit formula is adjusted for a participant if needed to comply with safe harbor rules under IRC section 401(l).

Selected data for two participants:

	Smith	Brown
Date of birth	1/1/35	1/1/35
Date of hire	1/1/89	1/1/89
1994 covered compensation	$33,000	$33,000
1989 compensation	10,000	35,000
1990 compensation	10,000	40,000
1991 compensation	15,000	45,000
1992 compensation	20,000	50,000
1993 compensation	25,000	55,000
1994 compensation	30,000	60,000

Question 30

In what range is the sum of the annual accrued benefits as of 12/31/94 for Smith and Brown?

(A) Less than $3,700

(B) $3,700 but less than $3,800

(C) $3,800 but less than $3,900

(D) $3,900 but less than $4,000

(E) $4,000 or more

1995

Data for Question 31 (4 points)

An employer sponsors a profit-sharing plan and a defined benefit plan. Both plans cover all 300 employees of the employer.

Actuarial cost method: Projected unit credit.

Valuation interest rate: 7% per year.

Selected valuation results as of 1/1/95:

Normal cost as of 1/1	$ 10,000
Accrued liability	100,000
Actuarial (market) value of assets	75,000
Expected benefit payments for 1995	0
Current liability projected to 12/31	112,900

Net 10-year amortization payments of all IRC section 404 bases as of 1/1/95: $15,000.

Total IRC section 401(a)(17) compensation paid to employees for 1995: $250,000.

The contribution for 1995 was paid on 12/31/95 in an amount equal to the deductible limit for 1995.

Minimum required contribution for 1995 payable 12/31/95: $0.

Question 31

In what range is the maximum deductible amount which the employer can contribute to the profit-sharing plan for 1995?

(A) Less than $5,000

(B) $5,000 but less than $15,000

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

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

(E) $35,000 or more

Data for Question 32 (4 points)

Actuarial cost method: Individual level premium.

Actuarial assumptions:

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

Date of birth for sole participant: 1/1/48.

Credit balance in funding standard account as of 12/31/94: $0.

Selected valuation results as of 1/1/95:

Normal cost as of 1/1	$ 36,443
Present value of future benefits	620,000
Actuarial (market) value of assets	210,500

There were no experience gains or losses before 1994.

Additional interest charge for 1995: $0.

The contribution for 1995 is paid on 12/31/95.

Question 32

In what range is the deductible limit for 1995?

(A) Less than $36,500

(B) $36,500 but less than $38,500

(C) $38,500 but less than $40,500

(D) $40,500 but less than $42,500

(E) $42,500 or more

1995

Data for Question 33 (4 points)

Type of plan: Multiemployer.

Plan effective date: 1/1/77.

Withdrawal liability method: Modified presumptive (two-pooled), with mandatory de minimis rule.

Assumed interest rate: 7% per year.

History of contributions:

Year	Contributions by All Employers	Contributions by Employer A	Year	Contributions by All Employers	Contributions by Employer A
1977	$500,000	$25,000	1986	$ 950,000	$36,000
1978	550,000	26,000	1987	1,000,000	38,000
1979	600,000	28,000	1988	1,050,000	40,000
1980	650,000	29,000	1989	1,100,000	41,000
1981	700,000	30,000	1990	1,150,000	42,000
1982	750,000	28,000	1991	1,200,000	45,000
1983	800,000	30,000	1992	1,250,000	47,000
1984	850,000	32,000	1993	1,300,000	48,000
1985	900,000	34,000	1994	1,350,000	20,000

Unfunded present value of vested benefits:

As of 12/31/79:	$4,000,000
As of 12/31/93:	2,000,000
As of 12/31/94:	1,800,000

All employers joined the plan on the plan effective date. Employer A withdrew from the plan in 1994. No other employers have withdrawn from the plan.

Question 33

In what range is Employer A's withdrawal liability?

(A) Less than $50,000

(B) $50,000 but less than $60,000

(C) $60,000 but less than $70,000

(D) $70,000 but less than $80,000

(E) $80,000 or more

1995

Data for Question 34 (4 points)

Consider the following transactions in a qualified plan:

I. An investment of 5% of the market value of assets in qualified securities of the plan sponsor.

II. The use of plan assets or income by a party in interest.

III. The sale of property between the plan and a party in interest.

IV. The plan providing services to a party in interest.

Question 34

Which of the following would be considered a prohibited transaction?

(A) All but I

(B) All but II

(C) All but III

(D) All but IV

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

1995

Data for Question 35 (4 points)

Plan effective date: 1/1/90.

Normal retirement age: Later of age 62 or fifth anniversary of date of participation.

Normal retirement benefit: 75% of final 3-year average compensation, prorated for less than 10 years of service.

Actuarial cost method: Individual entry age normal.

Actuarial assumptions:

Compensation increases: 5% per year.
Retirement age: Normal retirement age.

Valuation data for participant Smith as of 1/1/95:

Date of birth	1/1/35
Date of hire	1/1/88

Valuation compensation:

1990	$100,000
1991	105,000
1992	103,000
1993	105,000
1994	107,000
1995	110,000

Defined benefit dollar limitation under IRC section 415 for 1995: $120,000.

Question 35

In what range is Smith's projected annual retirement benefit for purposes of determining the deductible limit for 1995?

(A) Less than $68,500

(B) $68,500 but less than $72,000

(C) $72,000 but less than $75,500

(D) $75,500 but less than $79,000

(E) $79,000 or more

1995

Data for Question 36 (4 points)

Plan effective date: 1/1/92.

Actuarial cost method: Projected unit credit.

Valuation interest rate: 7% per year.

Selected valuation results and funding standard account items:

	1/1/94	1/1/95
Normal cost as of 1/1	$100,000	$ 90,000
Accrued liability	300,000	450,000
Actuarial (market) value of assets	280,000	420,000
Expected benefit payments for plan year	0	0
Current liability projected to 12/31	270,000	370,000
Credit balance as of 1/1	0	
Net amortization charges as of 1/1	30,000	

Contribution for 1994: $120,000 paid on 12/31/94.

The plan has always covered fewer than 100 participants.

Question 36

In what range is the minimum required contribution for 1995 payable 12/31/95?

(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 37 (4 points)

1995

Data for all nonexcludable employees:

	Normal Accrual Rate	Most Valuable Accrual Rate
NHCE 1 through NHCE 225	1.25%	2.60%
NHCE 226 through NHCE 450	1.80	2.40
NHCE 451 through NHCE 675	2.00	2.40
NHCE 676 through NHCE 900	2.15	2.70
HCE 1 through HCE 30	1.25	2.45
HCE 31 through HCE 60	1.75	2.50
HCE 61 through HCE 100	2.00	2.65

Non-Highly Compensated Employee Concentration Percentage	Safe Harbor Percentage	Unsafe Harbor Percentage
60%	50.00%	40.00%
65	46.25	36.25
70	42.50	32.50
75	38.75	28.75
80	35.00	25.00
85	31.25	21.25
90	27.50	20.00
95	23.75	20.00

The plan sponsor has elected not to impute permitted disparity in complying with the IRC section 401(a)(4) general nondiscrimination test.

Question 37

In what range is the excess of the ratio percentage for the rate group for HCE 40 over the minimum required ratio percentage?

(A) Less than 0%

(B) 0% but less than 5%

(C) 5% but less than 10%

(D) 10% but less than 15%

(E) 15% or more

Data for Question 38 (4 points) 1995

Plan effective date: 1/1/87.

Actuarial cost method: Frozen initial liability.

Valuation interest rate:

Before 1995: 7% per year.
After 1994: 8% per year.

Initial accrued liability: $800,000.

Credit balance in funding standard account as of 12/31/94: $15,000.

Unfunded liability as of 1/1/95: $600,000.

Contribution for 1995: $130,000 paid on 5/1/95.

Credit balance in funding standard account as of 12/31/95: $48,000.

Question 38

In what range is the normal cost for 1995 as of 1/1/95?

(A) Less than $43,300

(B) $43,300 but less than $46,300

(C) $46,300 but less than $49,300

(D) $49,300 but less than $52,300

(E) $52,300 or more

1995

Data for Question 39 (4 points)

Money purchase pension plan effective date: 1/1/95.

Money purchase pension plan contribution formula: 10% of compensation; this amount is deductible for the year in which the compensation is paid.

Defined benefit plan effective date: 1/1/91.

Normal retirement benefit: 1% of compensation for each year of service up to 35 years.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 7% per year.

Initial accrued liability: $500,000.

Normal cost for 1995 as of 1/1/95: $225,000.

Total compensation paid to employees for 1995: $2,000,000.

All employees are participants in both plans.

The contribution to the defined benefit plan for each year from 1991 through 1994 was paid on 12/31 of such year in an amount equal to the deductible limit for such year. The contributions to both plans for 1995 were paid on 12/31/95 in amounts equal to the deductible limits for 1995.

Question 39

In what range is the credit balance in the funding standard account as of 12/31/95?

(A) Less than $150,000

(B) $150,000 but less than $165,000

(C) $165,000 but less than $180,000

(D) $180,000 but less than $195,000

(E) $195,000 or more

1995

Data for Question 40 (4 points)

Plan effective date: 7/1/84.

Plan year: 7/1 - 6/30.

Actuarial cost method: Unit credit.

Valuation interest rate: 7.00% per year.

Current liability interest rate: 7.50% per year.

Selected valuation results and funding standard account items as of 7/1/94:

Normal cost as of 7/1	$ 42,000
Actuarial value of assets	290,000
Current liability as of 7/1	520,000
Credit balance as of 7/1	40,000
Net amortization charges as of 7/1 for:	
Initial accrued liability	18,000
Plan amendments	7,000
Assumption changes	(5,000)
Experience (gains) and losses	30,000
Outstanding balance of unfunded old liability	90,000
Unfunded old liability amount as of 7/1	10,303

The plan has always covered at least 150 participants.

Question 40

In what range is the minimum required contribution for the plan year ending 6/30/95?

(A) Less than $79,000

(B) $79,000 but less than $85,000

(C) $85,000 but less than $91,000

(D) $91,000 but less than $97,000

(E) $97,000 or more

1995

Data for Question 41 (4 points)

401(k) plan effective date: 1/1/86.

Defined benefit plan provisions:

Effective date: 1/1/85.
Normal retirement benefit: 90% of final 3-year average gross compensation.

Benefits from the defined benefit plan will be reduced first if benefits and contributions would otherwise exceed the combined limits of IRC section 415(e).

Data for employee Smith:

Date of birth	1/1/31
Date of hire	1/1/87
Date of retirement	1/1/96

Annual compensation:

Year	Gross Compensation	IRC Section 401(k) Deferral	IRC Section 402(g) Limit
1991	$ 75,000	$6,750	$8,475
1992	80,000	7,200	8,728
1993	85,000	7,650	8,994
1994	100,000	9,000	9,240
1995	155,000	9,240	9,240

Numerator of defined contribution fraction as of 12/31/90: $34,500.

Denominator of defined contribution fraction as of 12/31/90: $80,500.

Compensation limitation under IRC section 401(a)(17) for 1995: $150,000.

Defined contribution dollar limitation under IRC section 415 for 1991-1995: $30,000.

Defined benefit dollar limitation under IRC section 415 for 1995: $120,000.

Question 41

In what range is the maximum benefit payable to Smith from the defined benefit plan in 1996?

(A) Less than $87,500

(B) $87,500 but less than $90,500

(C) $90,500 but less than $93,500

(D) $93,500 but less than $96,500

NOVEMBER 1995 COURSE P-365U (EA2)

ANSWER KEY

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

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