SOCIETY OF ACTUARIES

AMERICAN SOCIETY OF PENSION ACTUAREIS

JOINT BOARD FOR THE ENROLLMENT OF ACTUARIES

COURSE P-365U (EA2)

JOINT BOARD BASIC EXAMINATION

This is the November 1988 examination which has been released to the public by the administering organizations.

88

FALL

365-14-88

Printed in U.S.A.

Conditions Generally Applicable
to all EA-2 Examination Questions

The following 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 section 401 of the Internal Revenue Code. 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 a collectively bargained or multiemployer plan.

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 from date of hire.

11. When the normal retirement benefit is computed as a dollar amount, or as a percentage of pay, 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 pay or a level dollar amount, the level percentage approach is used if the plan benefits are based on pay, and the level dollar approach is used if they are not.

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

21. The terms "actuarial value of assets" and "market value of assets" mean the values developed for the 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" or would meet the "best estimate" criterion.

23. Neither the actuarial cost method nor the actuarial assumptions have 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. No waivers of funding deficiencies or extensions of amortization periods have been granted.

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

28. 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.

29. For the purposes of computing the deductible limit for any year, the employer has never elected the fresh-start alternative or combined amortization bases.

30. The full funding limitation has never applied.

31. For purposes of determining the full funding limitation for any year, the special full funding limitation based on 150% of the current liability does not apply.

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.

Miscellaneous Conditions

33. All plan provisions and funding comply with all temporary and final regulations under the Internal Revenue Code and ERISA, as amended through June 30, 1988.

34. 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.

1988 EA-2

Data for Question 1

Data for all participants ever covered under the employer's defined benefit plan and defined contribution plan:

		Defined Benefit Plan		Defined Contribution Plan	
	Status	Present Value of Accrued Benefits as of 12/31/88	Distributions	Account Balance as of 12/31/88	Distributions
Key Employee					
Smith	Active 12/31/88	$180,000	$ 0	$100,000	$ 0
Non-Key Employees					
Brown	Died 10/1/82	0	20,000 12/1/82	0	20,000 1/1/83
Green	Active 12/31/88	30,000	0	50,000	0
White	Retired 12/15/88	80,000	0	40,000	0
Black	Quit 8/1/84	0	40,000 12/1/84	0	10,000 4/1/85

Valuation date for both plans: 12/31.

Question 1

In what range is the top-heavy ratio for 1989?

(A) Less than 50.0%

(B) 50.0% but less than 52.5%

(C) 52.5% but less than 55.0%

(D) 55.0% but less than 57.5%

(E) 57.5% or more

Data for Question 2

Plan effective date: 1/1/82.

Actuarial cost method: Frozen initial liability.

Assumed interest rate: 7%.

Initial accrued liability: $180,000.

Credit balance in funding standard account as of 12/31/85: $10,000.

Normal cost for 1986 as of 1/1/86: $60,000.

Normal cost for 1987 as of 1/1/87: $80,000.

The minimum funding requirements for 1986 and 1987 were waived to the maximum extent allowable under IRC section 412 and credited to the funding standard account for 1986 and 1987. The waiver application for 1986 was submitted on 12/31/86.

Required interest rate for 1986 and 1987 for amortizing waived contributions: 7%.

Credit balance in funding standard account as of 12/31/87: $0.

Question 2

In what range is the unfunded liability as of 1/1/88?

(A) Less than $320,000

(B) $320,000 but less than $325,000

(C) $325,000 but less than $330,000

(D) $330,000 but less than $335,000

(E) $335,000 or more

Data for Question 3

1988 EA-2

Plan effective date: 1/1/88.

Actuarial cost method: Frozen initial liability.

Assumed interest rate: 7%.

Number of employees as of 1/1/88: 200.

Initial accrued liability: $1,000,000.

Normal cost for 1988 as of 1/1/88: $200,000.

Current liability for purposes of IRC section 404 as of 12/31/88: $220,000.

The contribution for 1988 was paid on 12/31/88 in an amount equal to the deductible limit for 1988.

Benefit payments for 1988: $0.

Question 3

In what range is the credit balance in the funding standard account as of 12/31/88?

(A) Less than $25,000

(B) $25,000 but less than $50,000

(C) $50,000 but less than $75,000

(D) $75,000 but less than $100,000

(E) $100,000 or more

Data for Question 4

Profit-sharing plan provisions:

Effective date: 1/1/85.
Vesting: Full and immediate.
Employer contributions: 12% of compensation.

Defined benefit plan effective date: 1/1/87.

Data for participant Smith:

Date of hire 1/1/84
Date of retirement 1/1/88
Annual compensation:

1984	$ 75,000
1985	100,000
1986	130,000
1987	170,000

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

Question 4

In what range is Smith's defined contribution fraction as of 12/31/87?

(A) Less than 33%

(B) 33% but less than 37%

(C) 37% but less than 41%

(D) 41% but less than 45%

(E) 45% or more

Data for Question 5

Plan effective date: 1/1/84.

Actuarial cost method:

Before 1988: Aggregate.
After 1987: Unit credit.

Assumed interest rate: 7%.

Credit balance in funding standard account as of 12/31/87: $20,000.

Valuation results as of 1/1/88:

Normal cost as of 1/1	$ 75,000
Accrued liability	650,000
Actuarial value of assets	430,000

Question 5

In what range is the minimum required contribution for 1988 payable 12/31/88?

(A) Less than $76,000

(B) $76,000 but less than $77,000

(C) $77,000 but less than $78,000

(D) $78,000 but less than $79,000

(E) $79,000 or more

Data for Question 6

Plan effective date: 1/1/86.

Actuarial cost method: Unit credit.

Assumed interest rate: 7%.

Selected valuation results:

	1/1/86	1/1/87
Normal cost as of 1/1	$ 50,000	$ 40,000
Accrued liability	100,000	120,000
Actuarial (market) value of assets	0	72,000

The contribution for 1986 was paid on 7/1/86 in an amount equal to the deductible limit for 1986.

Question 6

In what range is the minimum required contribution for 1987 payable 12/31/87?

(A) Less than $36,000

(B) $36,000 but less than $38,000

(C) $38,000 but less than $40,000

(D) $40,000 but less than $42,000

(E) $42,000 or more

Data for Question 7

Plan effective date: 1/1/80.

Actuarial cost method:

Before 1988: Frozen initial liability.
After 1987: Projected unit credit.

Assumed interest rate: 7%.

Initial accrued liability: $300,000.

Unfunded liability as of 12/31/87: $250,000.

Valuation results as of 1/1/88:

Normal cost as of 1/1	$ 50,000
Unfunded accrued liability	275,000

Question 7

In what range is the minimum required contribution for 1988 payable 12/31/88?

(A) Less than $56,200

(B) $56,200 but less than $61,200

(C) $61,200 but less than $66,200

(D) $66,200 but less than $71,200

(E) $71,200 or more

<u>Data for Question 8</u>

1988 EA-2

Plan termination date: 12/31/87.

Normal retirement eligibility:

Effective 1/1/76: Age 65.
Effective 1/1/86: Earlier of age 65 or 25 years of service.

Normal retirement benefit:

Effective 1/1/76: $20 per month for each year of service.
Effective 1/1/86: $24 per month for each year of service.

Early retirement benefit: None.

Participant data as of 12/31/87:

	Smith	Brown
Status	Active	Retired 1/1/86
Age	69	67
Years of service	35	28
Ownership	0%	0%

<u>Question 8</u>

In what range is the sum of the monthly benefits in ERISA Section 4044 priority category 3?

(A) Less than $650

(B) $650 but less than $850

(C) $850 but less than $1,200

(D) $1,200 but less than $1,400

(E) $1,400 or more

Data for Question 9

Plan A effective date: 1/1/83.

As of 1/1/87, Plan A is split into Plans B and C using the de minimis rule of IRS Regulation 1.414(l)-1, with no split of the funding standard account.

Actuarial cost method: Entry age normal.

Assumed interest rate: 7%.

Credit balance in funding standard account for Plan A as of 12/31/86: $40,000.

Valuation results as of 1/1/87:

	Plan A	Plan B	Plan C
Normal cost as of 1/1	$ 80,000	$ 78,000	$ 2,000
Accrued liability	1,250,000	1,225,000	25,000
Present value of accrued benefits	900,000	888,000	12,000
Actuarial value of assets	1,000,000	988,000	12,000

There have been no experience gains or losses before 1987.

Question 9

In what range is the minimum required contribution for Plan B for 1987 payable 12/31/87?

(A) Less than $62,000

(B) $62,000 but less than $63,000

(C) $63,000 but less than $64,000

(D) $64,000 but less than $65,000

(E) $65,000 or more

Data for Question 10

Plan effective date: 1/1/84.

Actuarial cost method:

Before 1988: Entry age normal.
After 1987: Frozen initial liability.

Assumed interest rate: 7%.

Initial accrued liability: $500,000.

Valuation results as of 1/1/88:

Present value of future benefits	$1,500,000
Actuarial value of assets	500,000
Present value of future normal costs	600,000
Present value of future compensation	2,000,000
Annual compensation	200,000

There have been no experience gains or losses other than an experience gain of $20,000 in 1986.

Question 10

In what range is the minimum required contribution for 1988 payable 12/31/88?

(A) Less than $40,500

(B) $40,500 but less than $60,500

(C) $60,500 but less than $80,500

(D) $80,500 but less than $100,500

(E) $100,500 or more

Data for Question 11

Type of plan: Multiemployer.

Plan effective date: 1/1/75.

Withdrawal liability method: Presumptive method with mandatory de minimis rule.

History of contributions:

Year	Contributions by All Employers	Contributions by Employer A
1975	$1,000,000	$12,000
1976	1,200,000	14,000
1977	1,200,000	18,000
1978	1,400,000	20,000
1979	1,400,000	24,000
1980	1,500,000	25,000
1981	1,500,000	25,000

Present value of unfunded vested benefits as of 12/31:

1979	$12,000,000
1980	10,000,000
1981	10,000,000

Employer A withdrew from the plan in 1982. No other employers have withdrawn from the plan.

Question 11

In what range is Employer A's withdrawal liability?

(A) Less than $120,000

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

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

(D) $140,000 but less than $150,000

(E) $150,000 or more

Data for Question 12

Plan effective date: 1/1/84.

Actuarial cost method:

Before 1988: Unit credit.
After 1987: Entry age normal.

Assumed interest rate: 7%.

Credit balance in funding standard account as of 12/31/87: $1,250.

Valuation results (under entry age normal method) as of 1/1/88:

Normal cost as of 1/1	$ 25,000
Unfunded accrued liability	160,000

Selected amortization charges in funding standard account as of 1/1/88:

Initial accrued liability	$10,000
Increase in accrued liability due to amendment as of 1/1/85	1,500

There have been no experience gains or losses other than an experience gain of $9,000 in 1987.

Question 12

In what range is the amortization charge in the funding standard account as of 1/1/88 resulting from the change in actuarial cost method?

(A) Less than $1,720

(B) $1,720 but less than $1,820

(C) $1,820 but less than $1,920

(D) $1,920 but less than $2,020

(E) $2,020 or more

Data for Question 13

Plan effective date: 1/1/87.

Plan year: Calendar year.

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

Actuarial cost method: Frozen initial liability.

Assumed interest rate: 7%.

Initial accrued liability: $300,000.

Normal cost for 1987 as of 1/1/87: $40,000.

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

The contribution for the 1987 plan year was paid on 2/28/88 in an amount equal to the deductible limit for the taxable year ending 6/30/88.

Question 13

In what range is the credit balance in the funding standard account as of 12/31/87?

(A) Less than $17,000

(B) $17,000 but less than $18,000

(C) $18,000 but less than $19,000

(D) $19,000 but less than $20,000

(E) $20,000 or more

Data for Question 14

Plan effective date: 1/1/85.

Actuarial cost method: Frozen initial liability.

Assumed interest rate:

Before 1988: 8%.
After 1987: 7%.

Initial accrued liability: $240,000.

The contribution for each year before 1988 was paid on 12/31 of that year in an amount equal to the deductible limit for that year.

Valuation results as of 1/1/88:

	8%	7%
Normal cost as of 1/1	$ 17,000	$ 20,000
Accrued liability under entry age normal method	130,000	150,000

The full funding limitation does not apply in 1988.

Question 14

In what range is the deductible limit for 1988?

(A) Less than $53,000

(B) $53,000 but less than $55,000

(C) $55,000 but less than $57,000

(D) $57,000 but less than $59,000

(E) $59,000 or more

Data for Question 15

Plan effective date: 1/1/78.

Plan termination date: 7/1/88.

Actuarial cost method: Frozen initial liability.

Assumed interest rate: 7%.

Credit balance in funding standard account as of 12/31/87: $20,000.

Valuation results as of 1/1/88 (without regard to plan termination):

Normal cost as of 1/1	$ 25,000
Unfunded liability	300,000

Contribution for 1988: $0.

Question 15

In what range is the amount subject to excise tax for failure to meet minimum funding standards for 1988?

(A) Less than $7,000

(B) $7,000 but less than $17,000

(C) $17,000 but less than $27,000

(D) $27,000 but less than $37,000

(E) $37,000 or more

Data for Question 16

Plan effective date: 1/1/80.

Actuarial cost method: Frozen initial liability.

Assumed interest rate: 7%.

Credit balance in funding standard account as of 12/31/86: $10,000.

Amortization charge in funding standard account as of 1/1/87: $6,000.

Valuation results as of 1/1/87:

Normal cost as of 1/1	$ 9,000
Actuarial (market) value of assets	90,000
Normal cost under entry age normal method as of 1/1	8,000
Accrued liability under entry age normal method	95,000

Contribution carryover from 1986: $2,000.

The contribution for 1987 was paid on 12/31/87 in an amount equal to the deductible limit for 1987 minus the contribution carryover from 1986.

Question 16

In what range is the credit balance in the funding standard account as of 12/31/87?

(A) Less than $7,000

(B) $7,000 but less than $8,600

(C) $8,600 but less than $10,200

(D) $10,200 but less than $11,800

(E) $11,800 or more

Data for Question 17

Plan effective date: 1/1/81.

Actuarial cost method: Attained age normal.

Assumed interest rate: 7%.

Initial accrued liability: $450,000.

Credit balance in funding standard account as of 12/31/87: $25,000.

Valuation results as of 1/1/88:

Present value of future benefits	$ 1,750,000
Actuarial value of assets	700,000
Present value of future compensation	16,000,000
Annual compensation	900,000

The minimum funding requirement for 1988 was fully waived.

Contribution for 1988: $0.

Normal cost for 1989 as of 1/1/89: $40,000.

Required interest rate for 1989 for amortizing waived contributions: 7%.

There is no additional charge to the funding standard account for 1989 under IRC section 412(l).

Question 17

In what range is the minimum required contribution for 1989 payable 12/31/89?

(A) Less than $85,000

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

(C) $87,000 but less than $89,000

(D) $89,000 but less than $91,000

(E) $91,000 or more

Data for Question 18

Profit-sharing plan effective date: 1/1/85.

Defined benefit plan provisions:

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

Data for participant Smith:

Date of birth	1/1/23
Date of hire	1/1/85
Date of retirement	1/1/88

Annual compensation:

1985	$100,000
1986	130,000
1987	170,000

Defined benefit dollar limitation under IRC section 415 for 1988: $94,023.

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

Smith's defined contribution fraction as of 12/31/87 is 40%.

Question 18

In what range is the maximum annual benefit payable to Smith in 1988 from the defined benefit plan?

(A) Less than $17,000

(B) $17,000 but less than $27,000

(C) $27,000 but less than $37,000

(D) $37,000 but less than $47,000

(E) $47,000 or more

Data for Question 19

Actuarial cost method: Aggregate.

Assumed interest rate: 7%.

Credit balance in funding standard account as of 12/31/86: $0.

Selected valuation results:

	1/1/87	1/1/88
Normal cost as of 1/1	$ 18,000	$ 22,000
Actuarial value of assets	200,000	220,000
Market value of assets	178,000	200,000
Normal cost under entry age normal method as of 1/1	25,000	30,000
Accrued liability under entry age normal method	170,000	195,000

$30,000 of the minimum funding requirement for 1986 was waived. The waiver application was submitted on 12/31/86.

Contribution for 1987: $17,000 paid on 12/31/87.

Required interest rate for 1987 and 1988 for amortizing waived contributions: 7%.

Question 19

In what range is the minimum required contribution for 1988 payable 12/31/88?

(A) Less than $24,800

(B) $24,800 but less than $25,400

(C) $25,400 but less than $26,000

(D) $26,000 but less than $26,600

(E) $26,600 or more

Data for Question 20

Actuarial cost method: Frozen initial liability.

Assumed interest rate: 7%.

Credit balance in funding standard account as of 12/31/86: $8,000.

Valuation results as of 1/1/87:

Normal cost as of 1/1	$ 53,000
Unfunded liability	168,000
Actuarial value of assets	157,000
Market value of assets	151,000
Normal cost under entry age normal method as of 1/1	57,000
Accrued liability under entry age normal method	170,000

Initial contribution for 1987: $20,000 paid on 1/2/87.

Portion of contribution for 1987 deducted for 1986: $5,000.

Question 20

In what range is the full funding limitation for 1987 for purposes of IRC section 404?

(A) Less than $71,000

(B) $71,000 but less than $75,000

(C) $75,000 but less than $79,000

(D) $79,000 but less than $84,000

(E) $84,000 or more

Data for Question 21

Plan effective date: 1/1/80.

Actuarial cost method: Frozen initial liability.

Assumed interest rate:

Before 1988: 8%.
After 1987: 7%.

Initial accrued liability: $390,000.

Valuation results as of 1/1/88:

	8%	7%
Normal cost as of 1/1	$ 68,000	$ 80,000
Unfunded liability	300,000	340,000

Question 21

In what range is the deductible limit for 1988?

(A) Less than $134,000

(B) $134,000 but less than $139,000

(C) $139,000 but less than $144,000

(D) $144,000 but less than $149,000

(E) $149,000 or more

Data for Question 22

Actuarial cost method: Aggregate.

Assumed interest rate: 7%.

Funding deficiency in funding standard account as of 12/31/86: $1,000.

Valuation results as of 1/1/87:

Present value of future benefits	$100,000
Actuarial value of assets	60,000
Market value of assets	58,000
Present value of future compensation	500,000
Annual compensation	100,000

Outstanding balance of contribution waiver for 1985 as of 1/1/87: $5,000.

Required interest rate for 1986 and 1987 for amortizing waived contributions: 7%.

Question 22

In what range is the minimum required contribution for 1987 payable 12/31/87?

(A) Less than $8,000

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

(C) $8,500 but less than $9,000

(D) $9,000 but less than $9,500

(E) $9,500 or more

Data for Question 23

Plan effective date: 1/1/78. 1988 EA-2

Actuarial cost method: Frozen initial liability.

Assumed interest rate: 7%.

Initial accrued liability: $400,000.

Credit balance in funding standard account as of 12/31/86: $0.

Valuation results as of 1/1/87:

Normal cost as of 1/1	$ 50,000
Actuarial value of assets	900,000
Market value of assets	950,000
Normal cost under entry age normal method as of 1/1	60,000
Accrued liability under entry age normal method	870,000

Question 23

In what range is the full funding credit in the funding standard account for 1987 as of 12/31/87?

(A) Less than $20,000

(B) $20,000 but less than $30,000

(C) $30,000 but less than $40,000

(D) $40,000 but less than $50,000

(E) $50,000 or more

Data for Question 24

Eligibility for participation: Age 21.

Consider the following benefit formulas:

I. \$16 per month for each of the first 10 years of service, plus
\$21 per month for each of the next 20 years of service.

II. \$12 per month for each of the first 5 years of service, plus
\$18 per month for each of the next 10 years of service, plus
\$24 per month for each of the next 10 years of service.

III. \$16 per month for each of the first 5 years of service, plus
\$18 per month for each of the next 10 years of service, plus
\$25 per month for each of the next 10 years of service.

Question 24

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

(A) I and II only

(B) I and III only

(C) II and III only

(D) I, II, and III

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

Data for Question 25

Plan effective date: 1/1/83.

As of 1/1/88, Plan A is split into Plans B and C.

Actuarial cost method: Frozen initial liability.

Assumed interest rate: 7%.

Valuation results and funding standard account items as of 1/1/88:

	Plan A	Plan B	Plan C
Normal cost as of 1/1	-	$ 60,000	$ 35,000
Actuarial value of assets	$400,000		
Market value of assets	390,000	270,000	120,000
Accrued liability under entry age normal method	600,000	400,000	200,000
Credit balance	20,000	13,000	7,000
Outstanding balance of the amortization base	100,000		

The outstanding balance of the amortization base is allocated by the method illustrated in Revenue Ruling 81-212.

Question 25

In what range is the minimum required contribution for Plan B for 1988 payable 12/31/88?

(A) Less than $54,500

(B) $54,500 but less than $55,000

(C) $55,000 but less than $55,500

(D) $55,500 but less than $56,000

(E) $56,000 or more

Data for Question 26

Plan effective date: 1/1/84.

Actuarial cost method: Entry age normal.

Assumed interest rate: 7%.

Funding deficiency in regular funding standard account as of 12/31/87: $12,000.

Valuation results as of 1/1/88:

Normal cost as of 1/1	$15,000
Accrued liability	75,000
Actuarial value of assets	50,000

There have been no experience gains or losses.

The minimum required contribution for 1987 was determined under the alternative minimum funding standard account and was paid on 3/15/88.

Question 26

In what range is the deductible limit for 1988?

(A) Less than $18,000

(B) $18,000 but less than $19,000

(C) $19,000 but less than $20,000

(D) $20,000 but less than $21,000

(E) $21,000 or more

Data for Question 27

Type of plan: Collectively bargained with annual bargaining agreements commencing each 1/1.

Plan effective date: 1/1/86.

Employer contributions: $5 for each hour worked by a participant, payable on 12/31.

Actuarial cost method: Entry age normal with shortfall.

Assumed interest rate: 7%.

Each active participant is assumed to work 1,600 hours per year.

Selected valuation results:

	1/1/86	1/1/87
Active participants	5	6
Normal cost as of 1/1	$ 16,000	$ 20,000
Unfunded accrued liability	200,000	190,000

Contribution for 1986: $40,000 paid on 12/31/86.

Contribution for 1987: $45,000 paid on 12/31/87.

Question 27

In what range is the 1987 shortfall gain or loss?

(A) Loss of $2,340 or more

(B) Loss of less than $2,340

(C) $0 or gain of less than $2,340

(D) Gain of $2,340 but less than $4,680

(E) Gain of $4,680 or more

Data for Question 28

Plan termination date: 12/31/87.

Date of distribution of assets: 4/1/88.

Present value of accrued benefits as of 4/1/88 on a plan termination basis:

ERISA Section 4044 Priority Category	
1	$110,000
2	220,000
3	50,000
4	200,000
5	150,000
6	110,000
Total	$840,000

Market value of assets as of 4/1/88: $880,000.

Question 28

In what range is the asset reversion to the employer as of 4/1/88?

(A) Less than $25,000

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

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

(D) $27,000 but less than $28,000

(E) $28,000 or more

Data for Question 29

Plan effective date: 1/1/70.

Actuarial cost method: Frozen initial liability.

Assumed interest rate: 7%.

Normal cost for 1988 as of 1/1/88: $20,000.

Unfunded liability as of 1/1/88: $150,000.

Outstanding balances of amortization bases in funding standard account as of 1/1/88:

Initial unfunded liability as of 1/1/76	$200,000
Change in unfunded liability due to amendment as of 1/1/82	(80,000)
Waiver of 1983 contribution	50,000

Required interest rate for 1984 through 1988 for amortizing waived contributions: 7%.

Question 29

In what range is the minimum required contribution for 1988 payable 12/31/88?

(A) Less than $17,000

(B) $17,000 but less than $18,000

(C) $18,000 but less than $19,000

(D) $19,000 but less than $20,000

(E) $20,000 or more

Data for Question 30

Plan effective date: 1/1/87.

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

Actuarial cost method: Projected unit credit.

Actuarial assumptions:

Compensation increases: None.
Retirement age: 65.

Data for participant Smith:

Date of birth	1/1/34
Date of hire	1/1/59
1987 compensation	$200,000

Dollar limitation under IRC section 415 for 1988: $94,023.

Question 30

In what range is the annual benefit accrual used in determining Smith's normal cost for 1988 as of 1/1/88?

(A) Less than $500

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

(C) $3,000 but less than $6,000

(D) $6,000 but less than $9,000

(E) $9,000 or more

Data for Question 31

As of 1/1/87, Plan A is split into Plans B and C.

Actuarial cost method: Entry age normal.

Assumed interest rate: 7%.

Valuation results and funding standard account items as of 1/1/87:

	Plan A	Plan B	Plan C
Normal cost as of 1/1	$ 60,000	$ 50,000	$ 10,000
Accrued liability	600,000	500,000	100,000
Present value of accrued benefits on a plan termination basis	400,000	300,000	100,000
Actuarial (market) value of assets	500,000	300,000	200,000
Credit balance	50,000		
Outstanding balance of amortization charges (29 payments remaining)	250,000		
Outstanding balance of amortization credits (15 payments remaining)	100,000		

The funding standard account items are allocated by the method illustrated in Revenue Ruling 86-47.

Question 31

In what range is the minimum required contribution for Plan B for 1987 payable 12/31/87?

(A) Less than $62,500

(B) $62,500 but less than $65,000

(C) $65,000 but less than $67,500

(D) $67,500 but less than $70,000

(E) $70,000 or more

Data for Question 32

Plan termination date: 12/31/88.

Normal retirement benefit:

Effective 1/1/76: $18 per month for each year of service, payable as a life annuity.

Effective 4/1/86: $20 per month for each year of service, payable as a life annuity with five years certain.

Data for Smith:

Date of birth	1/1/34
Date of hire	1/1/64

Smith is not a substantial owner.

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

Maximum monthly benefit guaranteed by the PBGC for 1988: $1,909.

Question 32

In what range is the monthly normal retirement benefit guaranteed for Smith by the PBGC?

(A) Less than $455

(B) $455 but less than $465

(C) $465 but less than $475

(D) $475 but less than $485

(E) $485 or more

ANSWER KEY

NOVEMBER 1988 COURSE P-365U (EA2)

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