SOCIETY OF ACTUARIES

AMERICAN SOCIETY OF PENSION ACTUARIES

JOINT BOARD FOR THE ENROLLMENT OF ACTUARIES

NOVEMBER 1998 COURSE P-365U (EA2)

JOINT BOARD BASIC EXAMINATION

This is the November 1998 examination which has been released to the public by the administering organizations.

FALL
1998

365-14-98

Printed in U.S.A.

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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 established or maintained in connection with a collectively bargained agreement.

(5) The plan year, the employer's limitation year, and the employer's tax 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, and never have been, 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 and there is no liquidity shortfall.

(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 tax year coincident with such plan year.

(30) For purposes of determining the deductible limit for any year, the employer does not use (and has never used) the fresh-start alternative and does not combine (and has never 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.

(34) The additional funding charge shall be disregarded if sufficient information to determine such charge is not provided.

(35) For purposes of determining the additional funding charge, the optional rule and the transition rule shall be disregarded unless there is specific reference to such rules.

(36) The quarterly contribution requirement and the liquidity shortfall shall be disregarded if sufficient information to determine such requirement is not provided.

(37) The full funding limitations based on 90% or 150% of the current liability shall be disregarded if sufficient information to determine such limitations is not provided.

(38) For purposes of determining the deductible limit, the unfunded current liability shall be disregarded if sufficient information to determine such liability is not provided.

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

Miscellaneous General Conditions

(40) All plan provisions and funding comply with all temporary and final regulations under the Internal Revenue Code and ERISA, as amended through June 30, 1998.

(41) 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.

1998

Data for Question 1 (1 point)

Consider the following statement:

The plan administrator is required to provide written notice to plan participants in a defined benefit plan of a significant reduction in the future rate of benefit accrual due to a plan amendment on or after adoption of the plan amendment and at least 15 days prior to the effective date of the amendment.

Question 1

Is the above statement true or false?

(A) True

(B) False

Data for Question 2 (1 point)

Consider the following statement:

A plan sponsor may make an election to use the Transition Rule for calculating the additional funding charge in a year following a year in which the plan sponsor did not make such election.

Question 2

Is the above statement true or false?

(A) True

(B) False

1998

Data for Question 3 (1 point)

A plan sponsor maintains a defined benefit plan covering only hourly employees and a defined contribution plan covering only salaried employees. No employee is covered under both plans.

Consider the following statement:

> The plan sponsor is required to aggregate the contributions to the two plans and the compensation of the hourly and salaried employees to perform the 25% of compensation deductible limit test.

Question 3

Is the above statement true or false?

(A) True

(B) False

Data for Question 4 (1 point)

Consider the following statement:

> A plan administrator is required to furnish a written report to a given participant indicating the participant's accrued benefits if such participant requests so, in writing, and such participant has not received such a report in the preceding 12 months.

Question 4

Is the above statement true or false?

(A) True

(B) False

1998

Data for Question 5 (1 point)

Consider the following statement:

> Even if the benefit accruals of an ongoing plan have been frozen, the plan is still subject to the minimum top-heavy benefit accrual rules.

Question 5

Is the above statement true or false?

(A) True

(B) False

Data for Question 6 (1 point)

Consider the following statement:

> The plan administrator of a PBGC covered plan with less than 100 lives is not required to notify the PBGC of missed quarterly installments.

Question 6

Is the above statement true or false?

(A) True

(B) False

1998

Data for Question 7 (1 point)

Consider the following statement:

For the 1998 plan year, the Code defines the term "highly compensated employee" to mean any employee who:

1. was a 5% owner at any time during the preceding or current year, or

2. for the preceding year had compensation from the employer in excess of $80,000 (as indexed) and, if the employer so elects, was in the top 20% of the employees of the employer when ranked on the basis of compensation paid to employees during such year.

Question 7

Is the above statement true or false?

(A) True

(B) False

Data for Question 8 (1 point)

A calendar year plan is amended to freeze benefit accruals as of December 31, 1997 and is terminated as of March 31, 1998.

Consider the following statement:

The plan is not required to file Schedule B (Form 5500) for the 1998 plan year.

Question 8

Is the above statement true or false?

(A) True

(B) False

1998

Data for Question 9 (1 point)

Consider the following statement:

> Normal retirement age, for the purpose of IRC section 411, cannot be later than the later of age 65 or the fifth anniversary of the date of participation.

Question 9

Is the above statement true or false?

(A) True

(B) False

Data for Question 10 (1 point)

Consider the following statement:

> Under the nondiscrimination rules of ERISA, all of the participants of a plan with 25 or fewer participants are restricted employees for purposes of pre-termination restrictions on certain benefit distributions.

Question 10

Is the above statement true or false?

(A) True

(B) False

1998

Data for Question 11 (1 point)

Consider the following statement:

To determine the value of unfunded vested benefits for withdrawal liability in a multiemployer plan, actuarial assumptions from the minimum funding calculations in the most recent actuarial valuation must be used.

Question 11

Is the above statement true or false?

(A) True

(B) False

Data for Question 12 (1 point)

Consider the following statement:

For a defined benefit plan, the dollar limitation of IRC section 415(b) declared for a given calendar year applies to limitation years beginning in the calendar year.

Question 12

Is the above statement true or false?

(A) True

(B) False

1998

Data for Question 13 (1 point)

A plan with no early retirement provisions has a normal retirement benefit of:

> 1.2% of Average Annual Compensation up to Covered Compensation times years of service (maximum 35 years)
>
> PLUS
>
> 1.85% of Average Annual Compensation in excess of Covered Compensation times years of service, (maximum 10 years)
>
> PLUS
>
> 1.65% of Average Annual Compensation in excess of Covered Compensation times years of service in excess of 10 years, (maximum 25 years).

Consider the following statement:

> The disparity provided under a plan with the benefit formula above does not exceed the maximum excess allowance.

Question 13

Is the above statement true or false?

(A) True

(B) False

Data for Question 14 (1 point)

Consider the following statement:

For active participants, a defined benefit plan can eliminate a qualified disability benefit without violating the anti-cutback rules of IRC section 411(d)(6).

Question 14

Is the above statement true or false?

(A) True

(B) False

Data for Question 15 (1 point)

A plan is valued using the entry age normal cost method.

Consider the following statement:

The amortization base established in plan years beginning after 1998 as a result of the OBRA 87 full funding limitation must be amortized over a 20-year period.

Question 15

Is the above statement true or false?

(A) True

(B) False

1998

Data for Question 16 (1 point)

A calendar year plan currently has a valuation date of January 1. The plan meets all criteria of both the general and additional restrictions that might otherwise prevent the plan administrator from changing the funding method under revenue procedures for automatic approval.

Consider the following statement:

> The plan actuary, with the approval of the plan administrator, can automatically change the valuation date to December 31.

Question 16

Is the above statement true or false?

(A) True

(B) False

Data for Question 17 (4 points)

Plan effective date: 1/1/90

Actuarial assumptions specified in plan for determining lump sum actuarial equivalence:

> Average yield on 30-year Treasury securities for the month immediately preceding the beginning of the plan year, and 1983 Group Annuity Mortality Table blended 50% for males and 50% for females.

Data for participant Smith:

Date of birth	1/1/50
Date of hire	1/1/97
Annual accrued benefit as of 12/31/98	$1,100
Employee contributions, paid 12/31	
1997	$900
1998	900

120% of applicable Federal mid-term rate and related annuity values:

Year	Interest rate	Life annuity at 65
1997	7.34%	9.6
1998	7.13%	9.7

Selected values for determining lump sum actuarial equivalence:

Year	Interest rate	Life annuity at 65
1998	5.99%	10.7

Question 17

In what range is Smith's annual employer-provided accrued benefit as of 12/31/98?

(A) Less than $550

(B) $550 but less than $650

(C) $650 but less than $750

(D) $750 but less than $850

(E) $850 or more

1998

Data for Question 18 (4 points)

Plan effective date: 1/1/93

Valuation date: 12/31

Actuarial cost method: Aggregate.

Valuation interest rate: 7% per year.

Selected valuation results as of 12/31/98:

Normal cost	$74,000
Actuarial value of assets	610,000
Market value of assets	590,000
Entry age normal accrued liability (including the normal cost for the year)	635,000
Current liability (including the accrual for the year)	
OBRA '87	630,000
RPA '94	735,000

There have always been less than 100 participants in the plan.

The minimum funding requirement for 1997 was paid on 12/31/97.

Question 18

In what range is the deductible limit for 1998?

(A) Less than $40,000

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

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

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

(E) $70,000 or more

1998

Data for Question 19 (4 points)

Type of plan: Multiemployer.

Plan effective date: 1/1/96

Actuarial cost method:

Before 1998: Entry age normal.
After 1997: Unit credit.

Valuation interest rate: 7% per year.

Credit balance in funding standard account as of 12/31/97: $2,500

Selected valuation results as of 1/1/98:

Normal cost as of 1/1	$50,000
Accrued liability	780,000
Actuarial value of assets	220,000

Amortization charges in the funding standard account as of 1/1/98 due to:

Initial accrued liability	$43,000
Change in assumptions on 1/1/97	8,500
Experience loss in 1996	3,500

Experience gain or loss in 1997: $0

Question 19

In what range is the minimum required contribution as of 12/31/98?

(A) Less than $89,500

(B) $89,500 but less than $99,500

(C) $99,500 but less than $109,500

(D) $109,500 but less than $119,500

(E) $119,500 or more

1998

Data for Question 20 (4 points)

Consider the following statements regarding the mortality assumption used to determine current liability:

I. For purposes of determining whether the additional funding charge applies to a plan, current liability is always determined using the valuation mortality assumption.

II. For purposes of determining unfunded current liability for purposes of the maximum deductible limit, current liability is always determined using the valuation mortality assumption.

III. For purposes of determining the 150% of current liability component of the full funding limit, current liability is always determined using the valuation mortality assumption.

Question 20

Which, if any, of these statements 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

1998

Data for Question 21 (4 points)

Valuation interest rate: 7% per year.

175% Federal mid-term rate for January, 1998: 10.48%

Selected valuation results and funding standard account items:

	1/1/97	1/1/98
Credit balance as of 1/1	$55,000	$60,000
Normal cost as of 1/1	50,000	66,000
Net amortization charges as of 1/1	70,000	70,000
Funded current liability percentage	92%	100%

The contribution for 1997 was paid on 4/15/98.

There were no quarterly contributions due for the 1997 plan year.

All contributions for 1998 sufficient to avoid a funding deficiency in the funding standard account will be paid on 4/15/99.

Question 21

In what range is the additional interest charge due to late quarterly contribution for 1998?

(A) Less than $1,500

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

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

(D) $2,500 but less than $3,000

(E) $3,000 or more

1998

Data for Question 22 (4 points)

Plan effective date: 1/1/97

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

The plan is amended effective 1/1/98 to provide a normal retirement benefit of $50 per month for each year of service.

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

There are no inactive participants.

Selected valuation results:

	1/1/97 $40	1/1/98 $50
Normal cost as of 1/1	$75,000	$100,000
Accrued liability as of 1/1	600,000	850,000
Actuarial (market) value of assets	0	175,000

Contribution for 1997: $160,000 paid on 4/1/97.

Question 22

In what range is the minimum required contribution for 1998 if paid on 4/1/98?

(A) Less than $110,000

(B) $110,000 but less than $120,000

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

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

(E) $140,000 or more

1998

Data for Question 23 (4 points)

Plan effective date: 7/1/94

Plan year: July 1 - June 30

Tax year: Calendar year.

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

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 7% per year.

Assumed retirement age: 65

Initial accrued liability: $1,000,000

Selected valuation results as of 7/1/98:

Present value of future benefits	$2,200,000
Actuarial (market) value of assets	975,000
Payroll for active participants under age 65	1,500,000
Present value of future payroll	12,500,000

The contribution for each plan year is paid on 12/31 of that plan year in an amount equal to the deductible limit for the tax year ending in that plan year.

Question 23

In what range is the deductible limit for the tax year ending 12/31/98?

(A) Less than $170,000

(B) $170,000 but less than $190,000

(C) $190,000 but less than $210,000

(D) $210,000 but less than $230,000

(E) $230,000 or more

1998

Data for Question 24 (4 points)

Plan effective date: 1/1/86

Valuation date: 12/31

Actuarial cost method: Individual aggregate.

Valuation interest rate: 7% per year.

Credit balance as of 12/31/97: $0

Selected valuation results as of 12/31/98:

Normal cost	$120,000
Actuarial (market) value of assets excluding contributions for 1998	600,000
Normal cost under entry age normal method	100,000
Accrued liability under entry age normal method excluding normal cost for 1998	650,000
OBRA and RPA '94 current liability, including current liability accrual for 1998	850,000

Present value of benefits on a termination basis as of 12/31/98:

Priority category 1 (all guaranteed)	$0
Priority category 2 (all guaranteed)	0
Priority category 3 (all guaranteed)	450,000
Priority category 4 (all guaranteed)	350,000
Priority category 5 (non-guaranteed)	50,000
Priority category 6 (non-guaranteed)	50,000

Highest number of participants during 1998: 65

The plan is terminated effective on 12/31/98 under a PBGC Standard Termination.

Question 24

In what range is the deductible limit for 1998?

(A) Less than $125,000

(B) $125,000 but less than $175,000

(C) $175,000 but less than $225,000

(D) $225,000 but less than $275,000

(E) $275,000 or more

1998

Data for Question 25 (4 points)

Plan effective date: 1/1/68

Participation entry dates: January 1 and July 1

Valuation rate of interest: 7.00%

Current liability interest rate: 7.00%

Actuarial cost method: Entry age normal.

Normal cost as of 1/1/98: $45,000

Net amortization charges (credits) as of 1/1/98:

initial unfunded	$35,000
experience gains	(2,000)
plan amendments	20,000
cost method change	(5,000)
assumption changes	15,000

RPA '94 deficit reduction contribution: $255,000

OBRA '87 deficit reduction contribution: $275,000

Target amount (under Transition Rule): $300,000

Number of participants as of:	1/1/97	118
	7/1/97	136
	1/1/98	152

Employer elected to use the Optional Rule under IRC section 412(l)(3)(E) in 1995.

Question 25

What is the additional funding charge if the employer elects to use the Transition Rule under IRC section 412(l)(11) in 1998?

(A) Less than $110,000

(B) $110,000 but less than $135,000

(C) $135,000 but less than $160,000

(D) $160,000 but less than $185,000

(E) $185,000 or more

1998

Data for Question 26 (4 points)

Valuation date: 12/31

Actuarial cost method: Aggregate.

Valuation interest rate: 7% per year.

Funding deficiency in funding standard account as of 12/31/97: $30,000

Selected valuation results as of 12/31/98:

Present value of future benefits	$3,875,000
Actuarial value of assets excluding contributions for 1998	1,140,000
Market value of assets excluding contributions for 1998	1,130,000
Present value of future compensation	32,750,000
Annual compensation	1,700,000
Normal cost under entry age normal method	114,000
Accrued liability under entry age normal method excluding normal cost for 1998	1,190,000
OBRA and RPA 94 current liability, including current liability accrual for 1998	875,000

Question 26

In what range is the deductible limit for 1998?

(A) Less than $167,500

(B) $167,500 but less than $172,500

(C) $172,500 but less than $177,500

(D) $177,500 but less than $182,500

(E) $182,500 or more

Data for Question 27 (4 points)

1998

Plan effective date: 1/1/84

Normal retirement benefit: \$120 per month for each year of service.

Normal form of payment: Life annuity with 10 years certain.

Benefit accruals under the plan were frozen as of 1/1/90.

Actuarial cost method: Unit credit.

Actuarial assumptions:

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

Top-heavy ratio for each year since 1984: 70%

Valuation data for non-key employee Smith as of 1/1/98:

Date of birth: 1/1/45
Date of hire: 1/1/84
1997 compensation: \$45,000
Marital status: Single

Smith's compensation has remained constant throughout his employment.

Smith is not affected by any IRC section 415 limitations.

Selected annuity factors on the valuation basis:

$$\ddot{a}_{65}^{(12)} = 9.8$$

$$\ddot{a}_{\overline{65:\overline{10|}}}^{(12)} = 10.4$$

Question 27

In what range is Smith's accrued liability as of 1/1/98?

(A) Less than \$36,000

(B) \$36,000 but less than \$37,700

(C) \$37,700 but less than \$39,400

(D) \$39,400 but less than \$41,100

(E) \$41,100 or more

1998

Data for Question 28 (4 points)

The employer sponsors two defined benefit plans, Plan A and Plan B.

The plan year of Plan A ends on December 31st.

The plan year of Plan B ends on June 30th.

The valuation date for each plan is the last day of the plan year.

Plan A passes the coverage requirements of IRC section 410(b).

Plan B passes the coverage requirements of IRC section 410(b) only when aggregated with Plan A.

Present value of accrued benefits:

	Plan A as of 12/31/97	Plan B as of 6/30/98	Plan A as of 12/31/98
Key employees	$ 0	$ 400,000	$ 0
Non-key employees	$ 200,000	$ 0	$ 300,000
Total for all employees	$ 200,000	$ 400,000	$ 300,000

Consider the following statements regarding top-heavy plans:

I. Plan A and Plan B are a required aggregation group.

II. Plan B is top-heavy for the plan year that begins 7/1/98.

III. Plan A is top-heavy for the plan year that begins 1/1/99.

Question 28

Which, if any, of these 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

1998

Data for Question 29 (4 points)

Plan A is effective 1/1/95.

The employer has never maintained another defined benefit plan.

Plan A has an eligibility requirement of 1 year of service.

There are 250 participants in Plan A as of 1/1/98.

150 participants entered Plan A on the effective date. As of the effective date of Plan A, all 150 participants had worked for the employer for five years.

The remaining 100 participants entered Plan A upon completion of 1 year of service.

Consider the following statements regarding current liability for plans which are not multiemployer plans:

I. Pre-participation service may be disregarded when computing the OBRA full funding limitation.

II. 40% of pre-participation service for the 150 participants who entered Plan A on the effective date of 1/1/95 shall be taken into account in computing the RPA '94 current liability of the plan, as of 1/1/98.

III. An election not to disregard certain service in computing the current liability of the plan may be revoked only with the approval of the Secretary of the Treasury.

Question 29

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

(A) I only

(B) II only

(C) III only

(D) I, II and III

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

1998

Data for Question 30 (4 points)

Plan effective date: 1/1/90

Normal retirement benefit: 12.5% of the participant's high five average compensation times years of service from date of hire to normal retirement date up to a maximum of 8 years of service.

Normal retirement age: 58

Look back month: November.

Actuarial Equivalence in the Plan:

Pre-retirement interest:	6.50%
Pre-retirement mortality:	None
Post-retirement interest:	6.50%
Post-retirement mortality:	1983 GAM Table (complies with Revenue Ruling 95-6)

30-year Treasury rate for the month of November 1997: 6.11%

Defined benefit limitation under IRC section 415 for 1998: $130,000

Selected annuity factors ($\ddot{a}_x^{(12)}$):

Interest Rate	Age 58	Age 62	Age 65
5.00%	13.587	12.456	11.534
6.11%	12.231	11.318	10.556
6.50%	11.810	10.961	10.247

Valuation data for participant Smith:

Date of birth	1/1/40
Date of hire	1/1/90
High five average compensation	$80,000
High three average compensation	$85,000

Question 30

In what range is Smith's monthly accrued benefit as of 1/1/98?

(A) Less than $4,500

(B) $4,500 but less than $4,900

(C) $4,900 but less than $5,300

(D) $5,300 but less than $5,700

(E) $5,700 or more

1998

Data for Question 31 (4 points)

Plan effective date: 1/1/91

Actuarial cost method: Frozen initial liability

Valuation interest rate: 7%

Selected valuation results and funding standard account items as of 1/1/98:

Present value of future benefits	$565,000
Unfunded liability	75,000
Market value of assets	396,000
Actuarial value of assets	400,000
Present value of future salaries	1,700,000
Total annual salaries	165,000
Accrued liability under entry age normal method	400,000
Normal cost under entry age normal method	18,000
Credit balance	20,000

"OBRA '87" current liability projected to 12/31: $350,000

"RPA '94" current liability projected to 12/31: $350,000

Expected benefit payments for plan year: $0

Question 31

In what range is the deductible limit for 1998?

(A) Less than $20,900

(B) $20,900 but less than $21,900

(C) $21,900 but less than $22,900

(D) $22,900 but less than $23,900

(E) $23,900 or more

1998

Data for Question 32 (4 points)

Type of plan: Multiemployer.

Plan effective date: 1/1/89

Withdrawal liability method: Rolling 5 (one pool) with mandatory de minimis rule.

History of employer contributions:

Year	Employer A	Employer B	All Employers
1989	$ 70,000	$ 57,000	$ 750,000
1990	75,000	60,000	775,000
1991	78,000	65,000	802,000
1992	82,000	68,000	927,000
1993	83,000	75,000	1,023,000
1994	42,000	72,000	1,073,000
1995		75,000	1,103,000
1996		87,000	1,111,000
1997		45,000	1,120,000

Unfunded present value of vested benefits as of 12/31/96: $1,500,000

Unfunded present value of vested benefits as of 12/31/97: $1,400,000

Withdrawal liabilities expected to be collected for withdrawals before 1997 as of 12/31/96: $70,000

Withdrawal liabilities expected to be collected for withdrawals before 1997 as of 12/31/97: $64,000

Employer A withdrew from the plan in 1994. Employer B withdrew from the plan in 1997.
There have been no other withdrawals from the plan.

Question 32

In what range is Employer B's withdrawal liability?

(A) Less than $95,000

(B) $95,000 but less than $100,000

(C) $100,000 but less than $105,000

(D) $105,000 but less than $110,000

(E) $110,000 or more

1998

Data for Question 33 (4 points)

Plan effective date: 1/1/92

Actuarial cost method: Entry age normal.

Valuation interest rate: 7% per year.

Amortization schedule for 1998:

Amortization items	Year of establishment	Initial amount of base
Initial accrued liability	1992	$775,000
Assumption change	1994	40,000
Loss/(gain)	1995	(96,000)
OBRA '87 full funding limit credit	1995	49,000
Loss/(gain)	1996	95,000
Plan change	1997	230,000

Credit balance in funding standard account as of 12/31/97: $55,000

There have been no other experience gains or losses.

The full funding limitation for 1998 does not apply.

Normal cost for 1998 as of 1/1/98: $120,000

The contribution for 1998 was paid on 1/1/98 in an amount equal to the deductible limit for 1998.

Question 33

In what range is the credit balance in the funding standard account as of 12/31/98?

(A) Less than $118,500

(B) $118,500 but less than $124,000

(C) $124,000 but less than $129,500

(D) $129,500 but less than $135,000

(E) $135,000 or more

1998

Data for Question 34 (4 points)

Plan effective date: 1/1/96

Actuarial cost method: Entry age normal.

Valuation interest rate:

Before 1998: 8% per year.
After 1997: 7% per year.

Selected valuation results as of 1/1/98:

Normal cost as of 1/1	$50,000
Accrued liability	260,000
Actuarial (market) value of assets	100,000

Outstanding balance of the initial accrued liability base as of 12/31/97: $120,000

There have been no experience gains or losses since the plan's effective date.

The contribution for each year is paid on the last day of the plan year in an amount equal to the maximum deductible contribution for that plan year.

Question 34

In what range is the credit balance in the funding standard account as of 12/31/98?

(A) Less than $22,000

(B) $22,000 but less than $23,000

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

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

(E) $25,000 or more

1998

Data for Question 35 (4 points)

Plan effective date: 1/1/90

Asset valuation method:
Before 1998: Average market value.
After 1997: Market value.

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 7%

Required interest rate for 1998 for amortizing waived contributions: 8.95%

Initial accrued liability: $1,000,000

Credit balance in funding standard account as of 12/31/96: $0

Decrease in accrued liability as of 1/1/97 due to change in salary scale: $100,000

Normal cost for 1997 as of 1/1/97: $300,000

Waiver of the minimum funding requirement granted for 1997: $245,000

Contribution for 1997 paid on 12/31/97: $85,000

Selected valuation results as of 1/1/98:

Normal cost	$330,000
Market value of assets	1,200,000
Average market value of assets	970,000

Amortization period for change in asset valuation method: 10 years.

Question 35

In what range is the minimum required contribution for 1998 payable 12/31/98?

(A) Less than $430,000

(B) $430,000 but less than $470,000

(C) $470,000 but less than $510,000

(D) $510,000 but less than $550,000

(E) $550,000 or more

1998

Data for Question 36 (4 points)

Consider the following statements regarding classification of employees for the ratio percentage test.

I. An employee who fails to accrue a benefit for a plan year solely because his service exceeds the maximum number of years taken into account by the plan formula is treated as benefiting under the plan.

II. An employee who fails to accrue a benefit for a plan year solely due to his terminating employment during that year with less than 1000 hours of service is treated as an excludable employee.

III. An employee who fails to accrue a benefit for a plan year solely due to his frozen accrued benefit exceeding his benefit determined under the new plan formula is treated as benefiting under the plan.

Question 36

Which, if any, of these 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

1998

Data for Question 37 (4 points)

Profit sharing plan effective date: 1/1/93

Defined benefit plan effective date: 1/1/97

Actuarial cost method: Aggregate.

Valuation interest rate: 7%

Credit balance as of 12/31/97: $0

Valuation results as of valuation date of 12/31/98:

Present value of future benefits	$2,500,000
Covered payroll	1,000,000
Actuarial (market) value of assets	500,000
Present value of future pay	10,000,000
Current liability (including the accrual for the year)	790,000

Contribution for 1998:

Defined benefit plan	$270,000 paid on 12/31/98
Profit sharing plan	$120,000 paid on 12/31/98

All employees participate in both the profit sharing plan and the defined benefit plan. There are over 100 participants in the plans.

Question 37

In what range is the excise tax on nondeductible contributions for 1998?

(A) Less than $4,500

(B) $4,500 but less than $7,500

(C) $7,500 but less than $10,500

(D) $10,500 but less than $13,500

(E) $13,500 or more

1998

Data for Question 38 (4 points)

As of 12/31/98, Plan A is split into Plans B and C. There is no change in the employer that sponsors the plans.

Liability component of the full funding limitation for Plan A as of 12/31/98:

Attributable to Plan B participants	$200,000
Attributable to Plan C participants	325,000

Credit balance in funding standard account for Plan A as of 12/31/98:	$80,000

Present value of accrued benefits on a termination basis as of 12/31/98:

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

Actuarial (market) value of assets in Plan A as of 12/31/98:	$500,000

Question 38

In what range is the credit balance in the funding standard account for Plan B as of 1/1/99 allocated according to the method specified in Revenue Ruling 86-47?

(A) Less than $28,000

(B) $28,000 but less than $29,000

(C) $29,000 but less than $30,000

(D) $30,000 but less than $31,000

(E) $31,000 or more

1998

Data for Question 39 (4 points)

Plan effective date: 1/1/90

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 6% per year.

Current liability interest rate: 7% per year.

Credit balance in funding standard account as of 12/31/97: $5,000

Initial unfunded accrued liability: $250,000

Selected valuation results for 1998:

Normal cost as of 1/1	$35,000
Actuarial (market) value of assets as of 1/1	400,000
Normal cost under entry age normal method as of 1/1	25,000
Accrued liability under entry age normal method as of 1/1	450,000
Current liability projected to 12/31	330,000
Expected benefit payments for 1998	0

There was a plan amendment effective 1/1/95 increasing the unfunded liability by $100,000.

The contribution for 1998 was paid on 12/31/98 in an amount equal to the deductible limit for 1998.

Question 39

In what range is the credit balance in the funding standard account as of 12/31/98?

(A) Less than $10,000

(B) $10,000 but less than $20,000

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

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

(E) $40,000 or more

1998

Data for Question 40 (4 points)

Plan effective date: 7/1/90

Plan year: 7/1 - 6/30

Plan sponsor's tax year: 2/1 - 1/31

Actuarial cost method: Frozen initial liability.

Valuation interest rate: 7% per year.

Initial accrued liability: $300,000

Credit balance in funding standard account as of 6/30/97: $6,000

Normal cost as of 7/1/97: $50,000

There was a change in actuarial assumptions in 1993 increasing liabilities by $100,000.

The contribution for the plan year ending 6/30/98 was paid on 6/30/98 in an amount equal to the deductible limit for the tax year ending 1/31/98.

The deductible limit for any tax year is based upon the valuation for the plan year beginning in that tax year. All tax deductions to date were timely taken.

Question 40

In what range is the credit balance in the funding standard account as of 6/30/98?

(A) Less than $22,000

(B) $22,000 but less than $23,000

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

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

(E) $25,000 or more

1998

Data for Question 41 (4 points)

Profit sharing plan effective date: 1/1/98

Defined benefit plan effective date: 1/1/98

Actuarial cost method: Attained age normal.

Valuation interest rate: 7% per year.

Normal cost for 1998 as of 1/1/98: $70,000

Present value of accrued benefits as of 1/1/98: $335,000

Compensation paid in 1998:

Smith	$180,000
Brown	100,000
Green	120,000
25 others	25,000 each

All employees participate in both plans.

The contributions to the plans were paid on 12/31/98. On 12/31/98 the minimum required contribution was contributed to the defined benefit pension plan while the maximum deductible contribution was deposited into the profit sharing plan.

The compensation limit under IRC section 401(a)(17) for 1998 is $160,000.

Question 41

In what range is the 1998 contribution to the profit sharing plan?

(A) Less than $150,000

(B) $150,000 but less than $152,000

(C) $152,000 but less than $154,000

(D) $154,000 but less than $156,000

(E) $156,000 or more

1998

Data for Question 42 (4 points)

Effective date of plan: 1/1/58

Plan provisions:

The plan benefit is designed to meet the safe harbor for unit credit plans under regulation 1.401(a)(4)-3(b)(3).

Accrued benefit payable at normal retirement age equals the normal retirement benefit.

The annual accrued benefit at normal retirement age equals the highest 5 consecutive years average annual compensation times a percentage. The percentage is 3.0% for each of the first 10 years of service, plus 2.0% for each of the next 10 years of service, plus 2.5% for each of the next 10 years of service, plus X% for each additional year of service.

X% is the highest percentage allowed under the 133 1/3 percent accrual rule of IRC section 411(b)(1)(B).

Data for participant Smith:

Date of birth: 1/1/33
Date of hire: 1/1/58
Date of retirement: 1/1/98
Form of pension: Life annuity
Marital status: Single

Year	Compensation
1993	$ 8,000
1994	9,000
1995	10,000
1996	11,000
1997	12,000

Question 42

In what range is the maximum annual benefit Smith can receive as of 1/1/98?

(A) Less than $10,100

(B) $10,100 but less than $10,600

(C) $10,600 but less than $11,100

(D) $11,100 but less than $11,600

(E) $11,600 or more

1998

Data for Question 43 (4 points)

Normal retirement benefit: The sum of 1.0% 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: 5/9 of 1% for each month by which the benefit commencement date precedes the normal retirement date.

Normal form of payment: Life annuity with 5 years certain.

Plan factor to convert benefit from a life annuity with 5 years certain to a life annuity: 102%

Unadjusted permitted disparity factors in the regulations for IRC section 401(l) for different Social Security Retirement Ages (SSRA).

Age	SSRA 65	SSRA 66	SSRA 67
67	-	-	.750
66	-	.750	.700
65	.750	.700	.650
64	.700	.650	.600
63	.650	.600	.550
62	.600	.550	.500
61	.550	.500	.475
60	.500	.475	.450

Question 43

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

(A) Less than 0.60%

(B) 0.60% but less than 0.62%

(C) 0.62% but less than 0.64%

(D) 0.64% but less than 0.66%

(E) 0.66% or more

1998

Data for Question 44 (4 points)

Plan effective date: 1/1/80

Plan termination date: 1/1/94

Plan Provisions:
- Effective 1/1/80: 1.0% of final average compensation for each year of service.
- Effective 7/1/91: 3.0% of final average compensation for each year of service.
- Normal form of annuity: Unreduced 50% joint and survivor (contingent basis).
- Early retirement benefit: Normal retirement benefit reduced 1/2 of 1% 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 completed 20 years of service.
- Years of service: Based on elapsed time.

PBGC maximum monthly guaranteed benefit:
- As of 1/1/94: $2,556.82
- As of 1/1/98: $2,880.68

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

Age	Factor	Age	Factor	Age	Factor
64	.93	61	.72	58	.57
63	.86	60	.65		
62	.79	59	.61		

Other PBGC reduction factors for participant Smith (not a substantial owner):
- For difference in ages between Smith and spouse: .92
- For payment in the form of a 50% joint and survivor annuity (contingent basis): .9

	Data for participant Smith	Data for spouse
Date of birth	1/1/36	1/1/44
Date of hire	7/1/74	N/A
Date of retirement	1/1/98	N/A
Final average earnings as of 1/1/94	$60,000	N/A

Question 44

In what range is Smith's PBGC guaranteed monthly benefit payable 1/1/98?

(A) Less than $1,050

(B) $1,050 but less than $1,150

(C) $1,150 but less than $1,250

(D) $1,250 but less than $1,350

(E) $1,350 or more

Data for Question 45 (4 points)

Profit sharing plan effective date: 1/1/89

Defined benefit plan provisions:

Effective date 1/1/90
Normal form: Life annuity.

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: 1/1/34
Date of hire: 1/1/89
Date of retirement: 1/1/98
Annual early retirement benefit to begin at age 64 before application of IRC section 415 limits: $110,000.

Year	Annual Compensation	Annual Additions
1993	$ 80,000	$ 4,500
1994	80,000	6,000
1995	80,000	7,500
1996	150,000	9,000
1997	160,000	9,500

Numerator of defined contribution fraction as of 12/31/92: $20,000
Denominator of defined contribution fraction as of 12/31/92: $50,000
Defined contribution dollar limitation under IRC section 415(c) for each year 1993-1997: $30,000
Defined benefit dollar limitation under IRC section 415(b) for 1998: $130,000

Question 45

In what range is the maximum benefit payable to Smith from the defined benefit plan for 1998?

(A) Less than $91,000

(B) $91,000 but less than $94,000

(C) $94,000 but less than $97,000

(D) $97,000 but less than $100,000

(E) $100,000 or more

1998

Data for Question 46 (4 points)

Actuarial cost method: Aggregate.

Valuation interest rate: 8% per year.

Credit balance in funding standard account as of 12/31/96 and 12/31/97: $0

Selected valuation results:

	1997	1998
Normal cost as of 1/1	$1,500,000	$225,000
Actuarial value of assets, projected to 12/31	1,100,000	1,220,000
Market value of assets, projected to 12/31	1,000,000	1,150,000
Accrued liability under entry age normal method, projected to 12/31 (includes current year normal cost)	2,200,000	1,350,000
Current liability (OBRA '87 and RPA '94) projected to 12/31	1,300,000	1,650,000

Question 46

In what range is the minimum required contribution for 1998 payable 12/31/98?

(A) Less than $210,000

(B) $210,000 but less than $230,000

(C) $230,000 but less than $250,000

(D) $250,000 but less than $270,000

(E) $270,000 or more

Data for Question 47 (4 points) 1998

Plan effective date: 1/1/90

Plan termination date: 12/31/98

Data for participant Smith:

Date of birth	1/1/39
Spouse date of birth	1/1/39
Date of retirement	1/1/97
Monthly benefit under formula effective 1/1/90	$1,200.00
Monthly benefit under formula effective 3/1/95	$1,600.00
Form of benefit payment	100% joint and survivor

Smith is not a substantial owner.

Maximum monthly benefit guaranteed by the PBGC at age 65 in life only form of payment: $2,880.68

Adjustment to PBGC monthly benefit for 100% joint and survivor form of payment: 80%.

PBGC adjustment for early retirement: 7/12 of 1% for each of the first 60 months and 4/12 of 1% for each of the next 60 months by which the benefit commencement date precedes age 65.

Question 47

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

(A) Less than $1,260

(B) $1,260 but less than $1,320

(C) $1,320 but less than $1,380

(D) $1,380 but less than $1,440

(E) $1,440 or more

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ANSWER KEY

1. A	26. B
2. A	27. D
3. B	28. E
4. A	29. C
5. A	30. B
6. A	31. D
7. A	32. C
8. B	33. D
9. A	34. D
10. B	35. D
11. B	36. B
12. B	37. B
13. A	38. E
14. A	39. B
15. A	40. A
16. B	41. A
17. C	42. B
18. C	43. B
19. B	44. B
20. D	45. D
21. B	46. D
22. A	47. C
23. C	
24. C	
25. D	

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