

AMERICAN SOCIETY OF PENSION PROFESSIONALS & ACTUARIES
JOINT BOARD FOR THE ENROLLMENT OF ACTUARIES
SOCIETY OF ACTUARIES

Enrolled Actuaries Pension Examination, Segment L

EA-2, Segment L

Date: Tuesday, May 1, 2018

Time: 1:00 p.m. – 3:30 p.m.

INSTRUCTIONS TO CANDIDATES

- Write your candidate number here _____. Your name must not appear.
- Do not break the seal of this book until the supervisor tells you to do so.
- Special conditions generally applicable to all questions on this examination are inserted in the front of this book.
- All questions should be answered in accordance with laws, rules and regulations in effect as of November 30, 2017.
- This examination consists of 43 True/False or multiple-choice questions worth a total of 100 points. The point value for each question is shown in parentheses at the beginning of each question.
- Your score will be based on the point values for the questions that you answer correctly. No credit will be given for omitted answers and no credit will be lost for wrong answers; hence, you should answer all questions even those for which you have to guess. Answer choices C, D, and E will be considered incorrect answers on True-False questions.
- A separate answer sheet is inside the front cover of this book. During the time allotted for this examination, record all your answers on side 2 of the answer sheet. **NO ADDITIONAL TIME WILL BE ALLOWED FOR THIS PURPOSE.** No credit will be given for anything indicated in the examination book but not transferred to the answer sheet. Failure to stop writing or coding your answer sheet after time is called will result in the disqualification of your answer sheet or further disciplinary action.
- Five answer choices are given with each question, each answer choice being identified by a key letter (A to E). For each question, blacken the oval on the answer sheet which corresponds to the key letter of the answer choice that you select.
- Use a soft-lead pencil to mark the answer sheet. To facilitate correct mechanical scoring, be sure that, for each question, your pencil mark is dark and completely fills only the intended oval. Make no stray marks on the answer sheet. If you have to erase, do so completely.
- Do not spend too much time on any one question. If a question seems too difficult, leave it and go on.
- While every attempt is made to avoid defective questions, sometimes they do occur. If you believe a question is defective, the supervisor or proctor cannot give you any guidance beyond the instructions on the exam booklet.
- Clearly indicated answer choices in the test book can be an aid in grading examinations in the unlikely event of a lost answer sheet.
- Use the blank portions of each page for your scratch work. Extra blank pages are provided at the back of the examination book.
- When the supervisor tells you to do so, break the seal on the book and remove the answer sheet.

On the front of the answer sheet, space is provided to write and code candidate information. Complete the information requested by printing in the squares and blackening the circles (one in each column) corresponding to the letters or numbers printed. For each empty box blacken the small circle immediately above the "A" circle. Fill out the boxes titled:
 - Name
(Include last name, first name and middle initial)
 - Candidate Number
(Candidate/Eligibility Number, use leading zeros if needed to make it a five digit number)
 - Test Site Code
(The supervisor will supply the number.)
 - Examination Part
(Code the examination that you are taking by blackening the circle to the left of "Exam EA-2L")
 - Booklet Number
(The booklet number can be found in the upper right-hand corner of this examination book. Use leading zeros if needed to make it a four digit number.)In the box titled "Complete this section only if instructed to do so", fill in the circle to indicate if you are using a calculator and write in the make and model number.

In the box titled "Signature and Date" sign your name and write today's date. **If the answer sheet is not signed, it will not be graded.**

Leave the boxes titled "Test Code" and "Form Code" blank.

On the back of the answer sheet fill in the Booklet Number in the space provided.
- After the examination, the supervisor will collect this book and the answer sheet separately. **DO NOT ENCLOSE THE ANSWER SHEET IN THE BOOK.** All books and answer sheets must be returned. **THE QUESTIONS ARE CONFIDENTIAL AND MAY NOT BE TAKEN FROM THE EXAMINATION ROOM.**

Answer Key EA-2L Spring 2018
February 16, 2018

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

Data for Question 1 (1 point)

A plan administrator provides written notice, as required under ERISA section 101(j), to plan participants and beneficiaries 45 days after first becoming subject to benefit restrictions under IRC section 436.

Consider the following statement:

The plan administrator has met the timing requirements under ERISA section 101(j).

Question 1

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 2 (2 points)

Consider the following statements with respect to a plan administrator selecting an annuity provider for purposes of making benefit distributions:

- I. The plan administrator must take steps calculated to obtain the safest annuity available, unless under the circumstances it would be in the interests of participants and beneficiaries to do otherwise.
- II. The plan administrator may satisfy the DOL's prudence requirements by selecting an insurance provider based solely on size of the insurer relative to the annuity contract.
- III. The plan administrator may conclude, after conducting an appropriate search, that more than one annuity provider is able to offer the safest annuity available.

Question 2

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

- (A) None
- (B) I and 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.

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Data for Question 3 (1 point)

A plan has a floor-offset arrangement.

Benefit formula before profit sharing offset: 2% of compensation per year of participation

Profit sharing plan allocation formula: The plan allocates nonelective employer contributions to plan participants during the year under a uniform allocation formula.

Profit sharing plan offset: Any increase in accrued benefit during the year is offset by the nonelective employer contributions allocated during the year.

Consider the following statement:

The floor-offset plan meets the nondiscrimination safe harbor requirements of IRC section 401(a)(4).

Question 3

Is the above statement true or false?

(A) True

(B) False

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Data for Question 4 (5 points)

Type of plan: Applicable defined benefit (cash balance)

Selected plan provisions:

Normal retirement age	62
Normal form of benefit	Life annuity
Timing of pay credits	End of year
Interest credit	5%
Plan actuarial equivalence interest rate	5.5%

Nondiscrimination testing methods and assumptions:

Testing method	Benefits basis
Measurement period	Current plan year
Testing age	62
Snapshot date	12/31/2018
Standard interest rate	8.5%

Selected life annuity factors at age 62:

5%	12.68
5.5%	12.12
8.5%	8.48

Selected participant data for Smith and Jones:

	<u>Smith</u>	<u>Jones</u>
Age at 12/31/2018	54	40
2018 compensation	\$200,000	\$30,000
2018 pay credit	150,000	\$X

\$X = the minimum pay credit needed for Jones to have the same normal accrual rate as Smith.

Question 4

In what range is **\$X**?

- (A) Less than \$5,500
- (B) \$5,500 but less than \$8,200
- (C) \$8,200 but less than \$10,900
- (D) \$10,900 but less than \$13,600
- (E) \$13,600 or more

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Data for Question 5 (4 points)

Employees who work at least 1,000 hours in a year receive a benefit in the plan.

Managers are not eligible to participate in the plan.

Headcount for all of the employer's employees in 2017:

<u>Status at 12/31/2017</u>	<u>Hours worked during 2017</u>		
	<u>250</u>	<u>750</u>	<u>1,500</u>
Active non-managers	2	8	35
Active managers	3	1	X
Terminated non-managers	3	4	6
Terminated managers	5	6	4

All employees met the age and service requirement for plan participation.

The plan covers at least one HCE.

Snapshot testing is not used for purposes of IRC section 401(a)(26).

Y = the largest value of X that will allow the plan to satisfy the minimum participation requirements of IRC section 401(a)(26).

Question 5

In what range is Y?

- (A) Less than 25
- (B) 25 but less than 30
- (C) 30 but less than 35
- (D) 35 but less than 40
- (E) 40 or more

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Data for Question 6 (2 points)

An employer sponsors three plans: Plan A for Division A, Plan B for Division B, and Plan C for Division C.

Plan A eligibility: 1,000 hours of service

Plan B eligibility: Age 18 and 1 year of service

Plan C eligibility: Immediate

For all plans, the entry date is the date the employee satisfies the eligibility requirements.

	<u>Division A</u>	<u>Division B</u>	<u>Division C</u>
Eligible employees	85	69	47
Employees not yet eligible	15	13	0

The plan sponsor aggregates Plans A, B, and C for purposes of the coverage requirements under IRC section 410(b).

Question 6

In what range is the number of non-excludable employees?

- (A) Less than 210
- (B) 210 but less than 215
- (C) 215 but less than 220
- (D) 220 but less than 225
- (E) 225 or more

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Data for Question 7 (3 points)

Selected headcount for plan:

	<u>HCE</u>	<u>NHCE</u>
<u>Collectively bargained employees</u>		
Employees who have not met plan eligibility	1	3
Employees otherwise eligible but not benefitting	1	4
Participants benefitting	8	8
<u>Non-collectively bargained employees</u>		
Employees who have not met plan eligibility	8	20
Employees otherwise eligible but not benefitting	3	60
Participants benefitting	<u>X</u>	<u>120</u>
Total employees	X+21	215

Snapshot testing is not used for purposes of IRC section 410(b).

Y = the largest value of X that will allow the plan to pass the ratio percentage test under IRC section 410(b).

Question 7

In what range is Y ?

- (A) Less than 65
- (B) 65 but less than 70
- (C) 70 but less than 75
- (D) 75 but less than 80
- (E) 80 or more

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Data for Question 8 (2 points)

Consider the following statements with respect to nondiscrimination requirements:

- I. Employees who terminated employment during the year with no more than 750 hours of service can be excluded from both coverage and participation tests.
- II. A plan provides that the benefit is the sum of two formulas (A + B) that have each been tested separately to satisfy the uniformity requirements and safe harbors. Because formula B is not available to HCEs, the plan fails to satisfy coverage requirements.
- III. An offset plan formula is 2.5% multiplied by final average compensation minus 0.80% multiplied by final average compensation up to the offset level, for each year up to 35 years of service. The plan satisfies the requirements for the maximum offset allowance.

Question 8

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.

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Data for Question 9 (1 point)

A plan defines its qualified joint and survivor annuity as a joint and 75% survivor annuity.

The plan also offers a joint and 50% survivor annuity.

Benefit amounts under both optional payment forms are determined using the same actuarial equivalence basis.

Consider the following statement:

The plan cannot define its qualified pre-retirement survivor annuity (QPSA) as the joint and 50% survivor annuity.

Question 9

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 10 (1 point)

A plan allows for and provides timely suspension of benefit notices to participants upon normal retirement age.

Consider the following statement:

An active participant who is past normal retirement age must receive the greater of the actuarial equivalent of his normal retirement benefit or his accrued benefit calculated under the plan's benefit formula.

Question 10

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 11 (1 point)

Type of plan: Applicable defined benefit plan (cash balance)

Normal retirement age: 62

The plan uses the minimum vesting schedule permitted by law.

Data for participant Smith:

Date of birth	1/1/1955
Date of hire	1/1/2015
Smith has worked over 1,000 hours each year.	

Consider the following statement:

Smith was 100% vested as of 1/1/2017.

Question 11

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 12 (5 points)

Selected plan information:

Effective date	1/1/2010
Accrual rule satisfied	133-1/3% rule

The plan has been top-heavy each year since its inception.

Data for non-key employee Smith:

Date of birth	1/1/1970
Date of hire	1/1/2010
Compensation for all years of service	\$180,000
Monthly accrued benefit after one year of benefit accrual service	\$450

X = the highest possible monthly accrued benefit for Smith on 12/31/2018 that would satisfy the 133-1/3% accrual rule and the top-heavy minimum.

Y = the lowest possible monthly accrued benefit for Smith on 12/31/2018 that would satisfy the 133-1/3% accrual rule and the top-heavy minimum.

Question 12

In what range is $|X - Y|$?

- (A) Less than \$2,350
- (B) \$2,350 but less than \$3,100
- (C) \$3,100 but less than \$3,850
- (D) \$3,850 but less than \$4,600
- (E) \$4,600 or more

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Data for Question 13 (4 points)

Selected plan provisions:

Normal retirement date	Later of age 65 and the 5th anniversary of participation
Benefit formula	\$75 per month for each year of service
Benefit service	Plan years in which the employee works at least 1,000 hours
Vesting schedule	Statutory 7-year graded
Vesting service	Plan years in which the employee works at least 1,000 hours

Actuarial equivalence: 7.5% and applicable mortality table with no preretirement mortality

Selected data for participant Smith:

Date of birth	1/1/1952
Date of hire	1/1/2012
Date of retirement	1/1/2018

Hours history for Smith:

<u>Year</u>	<u>Hours</u>	<u>Year</u>	<u>Hours</u>
2012	1,250	2015	1,399
2013	1,500	2016	1,100
2014	900	2017	870

A timely suspension of benefits notice was provided to Smith on 1/1/2017. The plan does not provide actuarial increases or in-service distributions.

Selected annuity values using plan assumptions:

<u>Age</u>	<u>Life annuity</u>
65	9.98
66	9.78

Question 13

In what range is the vested accrued benefit payable at Smith's retirement?

- (A) Less than \$130
- (B) \$130 but less than \$195
- (C) \$195 but less than \$260
- (D) \$260 but less than \$325
- (E) \$325 or more

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Data for Question 14 (2 points)

Plan effective date: 1/1/2010

Vesting service: Plan years with at least 1,000 hours worked

The plan has the most restrictive method allowed under IRC section 411 for determining vesting service.

Data for participant Smith:

Date of birth: 1/1/1993

Hours history:

<u>Plan year</u>	<u>Hours</u>
2010	1,200
2011	1,600
2012	700
2013	1,100
2014	0
2015	950
2016	1,400
2017	1,100

Question 14

How many years of vesting service does Smith have as of the end of 2017?

- (A) 2
- (B) 3
- (C) 4
- (D) 5
- (E) Correct answer is not given by (A), (B), (C), or (D) above

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Data for Question 15 (2 points)

Consider the following statements with regard to PBGC premium filings:

PBGC premium filings and premium payments are not required after the plan year in which:

- I. A trustee is appointed for the plan under ERISA section 4042.
- II. The plan ceases to be a covered plan under ERISA section 4021.
- III. The plan's funded percentage under ERISA section 4010 for the preceding year equals or exceeds 100%.

Question 15

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

- (A) None
- (B) I and 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.

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Data for Question 16 (3 points)

Selected data as of 12/31/2017:

Active participants	26
Terminated vested participants	20
Retired participants	4

Selected data as of 1/1/2018:

Market value of assets	\$682,400
Actuarial value of assets	750,000
Standard premium funding target	1,420,000

There have been no terminations during 2017.

The plan administrator has opted out of the Lookback Rule and has not elected to use the Alternative Premium Funding Target for 2018.

Question 16

In what range is the total 2018 PBGC premium?

- (A) Less than \$29,700
- (B) \$29,700 but less than \$30,300
- (C) \$30,300 but less than \$30,900
- (D) \$30,900 but less than \$31,500
- (E) \$31,500 or more

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Data for Question 17 (3 points)

Participant information as of 12/31/2017:

Vested active	15
Non-vested active	4
Retirees	3
Beneficiaries	0
Alternate payees of deceased participants	2

Selected data as of 1/1/2018:

Active employees	19
Retirees	3
Beneficiaries	0
Alternate payees of deceased participants	2
Market value of assets	\$450,000
Actuarial value of assets	475,000
Standard premium funding target:	
Vested benefits	540,000
Non-vested benefits	90,000

All employees participate in the plan and have an accrued benefit.

The plan administrator has opted out of the Lookback Rule and has not elected to use the Alternative Premium Funding Target for 2018.

Question 17

In what range is the total 2018 PBGC premium?

- (A) Less than \$4,150
- (B) \$4,150 but less than \$4,400
- (C) \$4,400 but less than \$4,650
- (D) \$4,650 but less than \$4,900
- (E) \$4,900 or more

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Data for Question 18 (1 point)

Smith, Jones, and Brown each directly own one-third of a company that sponsors a plan. No one has indirect ownership. When the plan terminates, liabilities on a termination basis exceed assets.

Consider the following statement:

Any or all of Smith, Jones, and Brown may forgo a portion of their benefit in order to make the plan sufficient to terminate under a standard termination.

Question 18

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 19 (1 point)

Consider the following statement:

The accrued benefit derived from mandatory employee contributions is priority category 1 under ERISA section 4044.

Question 19

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 20 (1 point)

As part of the distress termination process, the plan administrator filed the Notice of Intent to Terminate on a timely basis to the PBGC using Form 600.

The PBGC subsequently issues a finding of noncompliance with respect to the Notice of Intent to Terminate.

Consider the following statement:

The proposed termination date is automatically extended by 60 days.

Question 20

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 21 (5 points)

Plan effective date: 1/1/2000

Plan termination date: 12/31/2017

Benefit formula before 10/1/2016: 1% of final compensation times all years of service

Benefit formula after 9/30/2016: 2% of final compensation times all years of service

Early retirement provisions:

Eligibility	Age 55 with 10 years of service
Early retirement reduction in effect before 7/1/2014	5% per year prior to age 65
Early retirement reduction in effect after 6/30/2014	0% per year prior to age 65

Data for active participant Smith, who is not a majority owner:

Date of birth	1/1/1962
Date of hire	1/1/1992
Final compensation	\$100,000

Expected retirement age pursuant to PBGC regulations: 56

Question 21

In what range is Smith's monthly PBGC guaranteed benefit at the expected retirement age?

- (A) Less than \$1,800
- (B) \$1,800 but less than \$2,000
- (C) \$2,000 but less than \$2,200
- (D) \$2,200 but less than \$2,400
- (E) \$2,400 or more

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Data for Question 22 (3 points)

X = the monthly maximum 2018 PBGC guaranteed benefit payable at age 63 as a life annuity.

Y = the monthly maximum 2018 PBGC guaranteed benefit payable at age 65 as a 15-year certain and life annuity.

Z = the monthly maximum 2018 PBGC guaranteed benefit payable at age 65 as a joint and 100% survivor annuity.

The participant and beneficiary have the same date of birth.

Question 22

In what range is the maximum of X , Y , and Z ?

- (A) Less than \$4,400
- (B) \$4,400 but less than \$4,550
- (C) \$4,550 but less than \$4,700
- (D) \$4,700 but less than \$4,850
- (E) \$4,850 or more

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Data for Question 23 (1 point)

A multiemployer plan sponsor issues a demand letter for withdrawal liability payments to an employer who completely withdraws from the plan.

The employer appeals the withdrawal liability assessment. The appeal is denied 90 days after the plan sponsor's date of demand.

Consider the following statement:

The employer is not required to make any withdrawal liability payments until the date the appeal is denied.

Question 23

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 24 (4 points)

Type of plan: Multiemployer

Method for withdrawal liability: Rolling-5 method with mandatory de minimis rule

Employer A completely withdrew from the plan on 12/27/2013 and paid the assessed withdrawal liability in a lump sum in 2014.

Employer B completely withdraws on 12/31/2017.

No other employers have withdrawn from the plan.

<u>Year</u>	<u>Total employer contributions*</u>	<u>Employer A contributions</u>	<u>Employer B contributions</u>	<u>Total 12/31 plan unfunded vested benefits</u>
2010	\$10,000,000	\$1,500,000	\$100,000	-
2011	11,000,000	1,600,000	120,000	-
2012	12,000,000	1,700,000	140,000	-
2013	13,000,000	1,800,000	160,000	-
2014	14,000,000		180,000	\$8,000,000
2015	15,000,000		200,000	8,250,000
2016	16,000,000		215,000	8,700,000
2017	17,000,000		230,000	9,500,000

**Including withdrawn employers*

Question 24

In what range is the withdrawal liability for Employer B?

- (A) Less than \$65,000
- (B) \$65,000 but less than \$80,000
- (C) \$80,000 but less than \$95,000
- (D) \$95,000 but less than \$110,000
- (E) \$110,000 or more

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Data for Question 25 (1 point)

As a result of terminating its pension plan, an employer has established a qualified replacement plan and also receives a reversion of qualified plan assets of \$100,000.

Consider the following statement:

The excise tax due under IRC section 4980(c) and that must be reported on IRS Form 5330 is \$20,000.

Question 25

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 26 (3 points)

The plan sponsor borrowed \$100,000 from the plan on 7/1/2016.

Interest on the loan is 7% per year payable annually on 6/30 until the loan is repaid.

The market rate of interest is 4.5%.

The plan sponsor made payments of \$7,000 on 6/30/2017 and 6/30/2018.

Question 26

In what range is the excise tax for the prohibited transaction due for 2018?

- (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

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Data for Question 27 (1 point)

A disqualified person, not a fiduciary, participates in a prohibited transaction that is not corrected within the taxable period.

Consider the following statement:

The disqualified person is subject to an additional tax of 100% of the amount involved in addition to the initial 15% tax.

Question 27

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 28 (1 point)

Consider the following statement:

The daughter of a 65% indirect owner of a corporation sponsoring a plan is considered a disqualified person.

Question 28

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 29 (2 points)

Consider the following statements:

- I. It is a prohibited transaction if a plan sponsor takes a loan from the plan to expand business operations.
- II. A 5% direct owner of a corporation sponsoring a pension plan is considered a disqualified person.
- III. The tax on a prohibited transaction shall be paid by any disqualified person who participates in the prohibited transaction, other than a fiduciary acting only as such.

Question 29

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

- (A) None
- (B) I and 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.

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Data for Question 30 (1 point)

An enrolled actuary timely discloses a potential conflict of interest with the affected clients, obtains written consent to continue providing services from the affected clients, and obtains waivers of the conflict of interest from the affected clients.

She believes she can represent each client competently and diligently with regard to the matter that involves the conflict of interest.

The representation is not prohibited by law.

Consider the following statement:

The enrolled actuary is not precluded from representing either client due to conflict of interest rules.

Question 30

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 31 (1 point)

Consider the following statement:

A conflict of interest for an enrolled actuary exists if the enrolled actuary's representation of one client will be directly adverse to another client.

Question 31

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 32 (1 point)

A plan does not provide for accelerated distributions.

The AFTAP for 2017 was certified on 9/30/2017 to be 89%.

On 4/1/2018, the presumed AFTAP decreases to 79%.

The funding standard carryover balance could be reduced under section 430(f) (i.e. waived) to increase the AFTAP above 80%.

Consider the following statement:

The plan sponsor is required to reduce the funding standard carryover balance to increase the AFTAP to at least 80%.

Question 32

Is the above statement true or false?

(A) True

(B) False

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Data for Question 33 (1 point)

A plan offers an alternative payment form at retirement that is a life annuity with level payments for the first 12 months and half the initial payment for all remaining months.

This alternative payment form is actuarially equivalent to the plan's straight life normal form of annuity.

Consider the following statement:

This alternative payment form is considered a prohibited payment for purposes of benefit restrictions under IRC section 436.

Question 33

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 34 (5 points)

Selected data as of 1/1/2017:

Funding target	\$1,000,000
Target normal cost	100,000
Market (actuarial) value of assets	780,000
Funding standard carryover balance	0
Prefunding balance	100,000

The 2018 prefunding balance calculated on 1/1/2018 reflecting 2017 return on assets, use of prefunding balance to satisfy the 2017 minimum required contribution, and prefunding balance created with additional contributions made during 2017, is \$350,000.

The plan provides for accelerated benefit distributions.

The 2017 AFTAP was certified on 3/1/2017.

Market (actuarial) value of assets at 1/1/2018: \$1,300,000

As of 4/1/2018, the 2018 AFTAP has not been certified.

Question 34

In what range is the 1/1/2018 prefunding balance, determined as of 4/1/2018?

- (A) Less than \$60,000
- (B) \$60,000 but less than \$120,000
- (C) \$120,000 but less than \$180,000
- (D) \$180,000 but less than \$240,000
- (E) \$240,000 or more

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Data for Question 35 (3 points)

Selected data as of 1/1/2016:

Funding target	\$1,150,000
Actuarial value of assets	1,050,000
Prefunding balance	0
Funding standard carryover balance	0

The enrolled actuary issued the 2016 AFTAP certification in a timely manner.

Selected data as of 1/1/2017:

Funding target	\$1,300,000
Actuarial value of assets	1,100,000
Prefunding balance	59,000

No range certification was prepared for the 2017 plan year.

Question 35

What is the latest date the 2017 AFTAP can be certified to avoid benefit restrictions for 2017?

- (A) 3/31/2017
- (B) 4/1/2017
- (C) 9/30/2017
- (D) 10/1/2017
- (E) Correct answer is not given by (A), (B), (C), or (D) above.

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Data for Question 36 (3 points)

A plan's 2017 AFTAP is 65%.

The plan provides for lump sum distributions determined using applicable IRC section 417(e) assumptions.

Data for participant Smith:

Date of birth	12/1/1952
Date of retirement	12/1/2017
Monthly life annuity benefit at retirement	\$12,300

Selected annuity factors at age 65:

<u>Basis</u>	<u>$\ddot{a}_{65}^{(12)}$</u>
Applicable IRC section 417(e) assumptions	13.28
Present value of the PBGC maximum guarantee under ERISA section 4022	14.17

Question 36

In what range is the maximum lump sum that can be paid to Smith at retirement?

- (A) Less than \$975,000
- (B) \$975,000 but less than \$1,475,000
- (C) \$1,475,000 but less than \$1,975,000
- (D) \$1,975,000 but less than \$2,475,000
- (E) \$2,475,000 or more

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Data for Question 37 (1 point)

Smith is hired on 1/1/2013 and has never earned more than \$5,000 in any year.

Consider the following statement:

As of 12/31/2018, it is possible for Smith to have an annual accrued benefit payable in the amount of \$10,000.

Question 37

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 38 (3 points)

Plan effective date: 1/1/1985

Normal retirement age: 62

Plan's actuarial equivalence assumptions:

Interest	7%
Post-retirement mortality	Applicable mortality table

Selected data for participant Smith:

Age at retirement	62
Service at retirement	25
Date of retirement	12/31/2017
Annual annuity in normal form (prior to application of limits under IRC section 415)	\$217,200

Selected optional form conversion factors using applicable mortality table:

<u>Payment form</u>	<u>5%</u>	<u>7%</u>
10-year certain and life	0.977	0.976
Joint and 50% survivor	0.928	0.939

X = Smith's annual 10-year certain and life benefit

Y = Smith's annual joint and 50% survivor benefit with a non-spouse beneficiary

Question 38

In what range is $|X - Y|$?

- (A) Less than \$6,900
- (B) \$6,900 but less than \$8,100
- (C) \$8,100 but less than \$9,300
- (D) \$9,300 but less than \$10,500
- (E) \$10,500 or more

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Data for Question 39 (4 points)

Plan entry requirement: Age 21 and 2 years of service

Normal retirement age: 62

Normal retirement benefit:

Effective 1/1/2017, 95% times highest 3-year average compensation

Effective 1/1/2018, 100% times highest 3-year average compensation

The plan suspends benefits for employees working beyond normal retirement age. Smith timely receives a suspension of benefit notice.

Data for participant Smith:

Date of birth 1/1/1955

Date of hire 1/1/2008

<u>Year</u>	<u>Compensation</u>
2008-2014	\$150,000
2015	\$140,000
2016	\$190,000
2017	\$210,000

X = Smith's annual accrued benefit payable as of 1/1/2018.

Y = Smith's annual accrued benefit payable as of 1/1/2017.

Question 39

In what range is $|X - Y|$?

- (A) Less than \$21,000
- (B) \$21,000 but less than \$25,000
- (C) \$25,000 but less than \$29,000
- (D) \$29,000 but less than \$33,000
- (E) \$33,000 or more

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Data for Question 40 (3 points)

Company A sponsors a defined benefit plan and a profit sharing plan.

When a key employee of Company A reached normal retirement age in 2012, he received the lump sum value of his benefit in the defined benefit plan and rolled it into the profit sharing plan.

The key employee distribution was an in-service distribution.

As of the 12/31/2017 determination date, the value of benefits and account balances were as follows:

	<u>Defined benefit present value of accrued benefits</u>	<u>Profit sharing account balance</u>	<u>Profit sharing plan related rollover account balance</u>
Key employees	\$600,000	\$390,000	\$400,000
Non-key employees	425,000	275,000	0
Total	1,025,000	665,000	400,000

Question 40

In what range is the top-heavy ratio that applies to the defined benefit plan as of the determination date?

- (A) Less than 59.00%
- (B) 59.00% but less than 62.50%
- (C) 62.50% but less than 66.00%
- (D) 66.00% but less than 69.50%
- (E) 69.50% or more

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Data for Question 41 (1 point)

Company A and Company B are members of a controlled group.

Company A sponsors a defined benefit plan.

Smith, a plan participant, owns 6% of Company A and 3% of Company B.

Based on the value of the stock, Smith's ownership of the controlled group is 4.35%.

Smith's annual compensation is \$140,000 and Smith is an officer of both companies.

Consider the following statement:

Smith is a key employee for top-heavy purposes as defined in IRC section 416.

Question 41

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 42 (4 points)

Normal retirement benefit: 1.25% of final 3-year average compensation times years of service

Plan vesting schedule: 100% vested after five years of service

Top-heavy vesting schedule: 6-year graded

The plan was determined to be top-heavy for 2012-2016 but not 2017.

The plan provides the smallest top-heavy benefit allowable.

Data for non-key participant Smith:

Date of hire 1/1/2012

<u>Year</u>	<u>Compensation</u>
2012	\$40,000
2013	45,000
2014	55,000
2015	55,000
2016	65,000
2017	70,000

X = Smith's annual vested accrued benefit as of 1/1/2018.

Question 42

In what range is X ?

- (A) Less than \$4,500
- (B) \$4,500 but less than \$5,000
- (C) \$5,000 but less than \$5,500
- (D) \$5,500 but less than \$6,000
- (E) \$6,000 or more

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Data for Question 43 (3 points)

Smith is a non-key participant in a plan that has been top-heavy since its inception on 1/1/1990.

Data for Smith:

Date of hire	1/1/1994
Highest consecutive 3-year average compensation	\$28,000
Highest consecutive 5-year average compensation	25,000

Question 43

In what range is the minimum monthly top-heavy accrued benefit for Smith as of 12/31/2017?

- (A) Less than \$420
- (B) \$420 but less than \$490
- (C) \$490 but less than \$560
- (D) \$560 but less than \$630
- (E) \$630 or more

****END OF EXAMINATION****

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