

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 10, 2016

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, 2015.
  - This examination consists of 42 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 2016**

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

Data for Question 1 (1 point)

Smith, an enrolled actuary, believes a plan sponsor may use the services Smith is providing in a fraudulent manner.

Consider the following statement:

Smith may perform actuarial services for the plan sponsor as long as the IRS and DOL are notified.

Question 1

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 2 (1 point)

An employer terminates Plan A, which covered all members of its workforce.

At the time of plan termination, all participants were actively employed.

The plan did not provide for benefit increases to participants in Plan A at termination.

The employer transferred 75% of the excess assets from Plan A to a replacement plan.

90% of the remaining active participants in the terminated plan are active participants in the replacement plan.

Consider the following statement:

For this employer, the excise tax on reversions is 50%.

Question 2

Is the above statement true or false?

(A) True

(B) False

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Data for Question 3 (1 point)

Smith, a former employee of Company A, is currently an employee of Company B.

Smith has accrued benefits in the plan of each company.

Company B is and has always been a 60% subsidiary of Company A.

Consider the following statement:

The sum of Smith's annual benefits under both companies' plans is not permitted to exceed the IRC section 415(b) benefit limitations.

Question 3

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 4 (1 point)

As part of a Rehabilitation Plan, a multiemployer plan has reduced its early retirement subsidies for previously accrued benefits.

The plan's Board of Trustees has adopted the PBGC Technical Update 10-3 methodology to recognize the value of Affected Benefits in withdrawal liability calculations.

Consider the following statement:

An employer's proportional share of the value of Affected Benefits includes the change in liability for the reduced early retirement subsidies.

Question 4

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 5 (1 point)

A plan covers 65% of non-excludable employees throughout 2015. All employees of the plan sponsor were HCEs.

Consider the following statement:

The plan meets the coverage requirements of IRC section 410(b) during 2015.

Question 5

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 6 (1 point)

A plan sponsor pays all required PBGC premiums for Plan A for the 2016 plan year.

Effective 10/31/2016, Plan A spins off some of its assets and liabilities to form Plan B.

The spinoff is not *de minimis*.

Consider the following statement:

The plan sponsor owes PBGC premiums for Plan B for the 2016 plan year.

Question 6

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 7 (1 point)

Consider the following statement:

A fiduciary selecting an annuity provider for a plan termination may select a lower quote solely to avoid making additional contributions upon termination.

Question 7

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 8 (1 point)

A plan is established on 1/1/2012 and there is no predecessor plan.

The plan sponsor amends the plan effective 4/1/2016.

The 2016 AFTAP was certified at 80% on 3/31/2016 and did not reflect any amendment.

If the amendment had been reflected in the AFTAP, the AFTAP would have been 79%.

Consider the following statement:

In order for the amendment to take effect on 4/1/2016, an IRC section 436 contribution deposited by 4/1/2016, increasing the AFTAP to 80%, is required.

Question 8

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 9 (1 point)

Consider the following statement:

The IRC section 415(b) compensation limit is actuarially adjusted for a benefit commencement date after normal retirement age.

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 is in the process of a standard termination.

Smith, a 79% owner of the corporation sponsoring the pension plan, has never been married and is not a party to any qualified domestic relations orders.

Consider the following statement:

Smith may elect to forgo receipt of plan benefits to the extent necessary to enable the plan to satisfy the standard termination requirements.

Question 10

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 11 (1 point)

Smith owns 45% of a plan sponsor.

Smith's grandchild, a 4% owner, is an employee of the plan sponsor, has annual compensation of \$60,000, and is not an officer or director of the company.

The remaining 51% is owned by an unrelated party.

The ownership structure has not changed in the last five years.

Consider the following statement:

Smith's grandchild is a key employee for top-heavy purposes under IRC section 416.

Question 11

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 12 (1 point)

An active participant satisfied the plan's early retirement eligibility requirements on 1/1/2014.

The plan underwent a distress termination with a date of plan termination of 1/1/2016.

Consider the following statement:

The value of the participant's benefit is under priority category 3 of ERISA section 4044.

Question 12

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 13 (1 point)

Employer A completely withdraws from a multiemployer plan in 2014.

In 2016, it is determined that the plan has had a mass withdrawal.

Consider the following statement:

The withdrawal liability amount for Employer A could increase as a result of the mass withdrawal.

Question 13

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 14 (1 point)

A client requests that an enrolled actuary return all client records in order for the client to address a legal matter.

There is no dispute regarding fees between the client and actuary.

Consider the following statement:

The records that must be returned include any applicable electronic records of the client.

Question 14

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 15 (1 point)

Smith, an independent auditor, prepares the Form 5500 for a company's plan.

The plan sells its limited partnership interest holdings to Smith.

Consider the following statement:

The sale of the limited partnership interest holdings to Smith is a prohibited transaction.

Question 15

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 16 (1 point)

Consider the following statement:

An enrolled actuary must certify the PBGC premium filing for a multiemployer plan.

Question 16

Is the above statement true or false?

- (A) True
- (B) False

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Data for Question 17 (1 point)

An employer maintains two separate plans with valuation dates as of the end of the respective plan years.

Both plans were adopted during 2000.

The plans are part of a required aggregation group.

The plan year for Plan A begins on 7/1.

The plan year for Plan B begins on 1/1.

Consider the following statement:

For purposes of calculating the top-heavy ratio for the plans for their plan years that end in the 2016 calendar year, the present value of Plan A benefits is calculated as of 6/30/2015 and the present value of Plan B benefits is calculated as of 12/31/2015.

Question 17

Is the above statement true or false?

(A) True

(B) False

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Data for Question 18 (2 points)

Selected information as of 1/1/2016:

Funding target using stabilized segment rates	\$980,000
Funding target not using stabilized segment rates	1,200,000
Actuarial (market) value of assets	920,000
Prefunding balance	75,000
Carryover balance	0

$X$  = the 2016 AFTAP.

Question 18

In what range is  $X$ ?

- (A) Less than 75.00%
- (B) 75.00% but less than 81.25%
- (C) 81.25% but less than 87.50%
- (D) 87.50% but less than 93.75%
- (E) 93.75% or more

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Data for Question 19 (3 points)

Plan effective date: 1/1/2008.

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

Vesting service: Plan years in which the employee works at least 1,000 hours.

Normal retirement age: 62.

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

The employees shown below were originally hired on 1/1/2011.

No employee has left service under the terms recognized under the special rule for paternity and maternity absences.

	Employee 1	Employee 2	Employee 3	Employee 4
Age at hire	18	25	16	60
2011 hours	1,901	1,956	1,325	1,254
2012 hours	1,850	0	700	565
2013 hours	1,251	1,210	1,743	779
2014 hours	1,801	355	943	1,645
2015 hours	1,583	1,479	1,100	560

Question 19

How many of the employees listed above are vested by 1/1/2016?

- (A) 0
- (B) 1
- (C) 2
- (D) 3
- (E) 4

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Data for Question 20 (2 points)

Consider the following statements:

- I. A pension plan offers a qualified optional survivor annuity (QOSA) that is not actuarially equivalent to the qualified joint and survivor annuity (QJSA). Spousal consent for election of the QOSA is not required.
- II. A plan that offers a joint and 75% survivor annuity as the plan's QJSA option must offer a joint and 50% survivor annuity as the QOSA.
- III. The QJSA must be provided to a plan participant who has been married for a 6-month period ending on the annuity starting date.

Question 20

Which, if any, of the above 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 21 (3 points)

An employer maintains separate plans for each of its three divisions.

None of these plans are aggregated with any other plan for any purpose.

Accrual rates for all participants:

Employee	Division I (Plan I)	Division II (Plan II)	Division III (Plan III)
HCE 1	4.20%		
HCE 2	4.20%		
HCE 3		Excluded	
HCE 4			4.20%
NHCE 1	See note *		
NHCE 2	See note *		
NHCE 3		3.10%	
NHCE 4			5.00%
NHCE 5			5.00%
NHCE 6			5.00%

\* Less than meaningful benefits

Question 21

Which, if any, plan(s) comply with the minimum participation requirements?

- (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 22 (4 points)

Plan effective date: 1/1/2001.

During 2015, the plan was amended to increase benefits effective 6/30/2016.

Selected information as of 1/1/2016:

Funding standard carryover balance	\$0
Prefunding balance	0
Market value of assets	23,065,000
Actuarial value of assets	23,000,000
Funding target before amendment	29,000,000
Increase in funding target due to amendment	1,000,000

Other information:

NHCE annuity purchases during 2014	\$725,000
NHCE annuity purchases during 2015	520,000
NHCE annuity purchases during first 6 months of 2016	330,000
Effective interest rate for 2015	4.75%
Effective interest rate for 2016	5.50%

The 2016 AFTAP was certified on 6/1/2016.

$X$  = the smallest IRC section 436 contribution that the plan sponsor has to make on 6/30/2016 to allow the amendment to take effect.

Question 22

In what range is  $X$ ?

- (A) Less than \$770,000
- (B) \$770,000 but less than \$837,000
- (C) \$837,000 but less than \$904,000
- (D) \$904,000 but less than \$971,000
- (E) \$971,000 or more

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Data for Question 23 (5 points)

A plan terminated on 12/31/2015.

Benefit formula: For owners, \$360 per month for each year of participation.  
For non-owners, \$135 per month for each year of participation.

Early retirement eligibility: Age 62.

Early retirement reduction: 5% for each year before age 65.

Selected data for Smith and Jones:

	<u>Smith</u>	<u>Jones</u>
Date of birth	12/31/1950	12/31/1951
Date of hire	12/31/1994	12/31/2005
Date of entry	12/31/1995	12/31/2006
Percent of ownership	60%	0%
Highest average compensation		
3-year consecutive	\$200,000	\$15,000
5-year consecutive	200,000	12,000

The expected retirement age for both participants is the age at plan termination.

Selected annuity factors used by PBGC to value benefits:

$$\begin{aligned}\ddot{a}_{61} &= 17.31 \\ \ddot{a}_{62} &= 16.82 \\ \ddot{a}_{63} &= 16.33 \\ \ddot{a}_{64} &= 15.84 \\ \ddot{a}_{65} &= 15.35\end{aligned}$$

$X$  = the sum of the present values of the PBGC priority category 5 benefits for Smith and Jones at plan termination

Question 23

In what range is  $X$ ?

- (A) Less than \$250,000
- (B) \$250,000 but less than \$310,000
- (C) \$310,000 but less than \$370,000
- (D) \$370,000 but less than \$430,000
- (E) \$430,000 or more

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Data for Question 24 (4 points)

Type of plan: Multiemployer.

Valuation interest rate: 6.25%.

Method for withdrawal liability: Rolling-5.

Method for allocation of Affected Benefits: PBGC Technical Update 10-3 simplified method.

The plan was initially certified in critical status for the plan year beginning 1/1/2013.

The plan has reduced benefits as part of a rehabilitation plan.

Through 12/31/2014, no employers have ever withdrawn from the plan.

Value of Affected Benefits as of 12/31/2013: \$8,000,000.

No benefit reductions took effect during 2014.

Unfunded vested benefit liability not including Affected Benefits:

As of 12/31/2014	\$38,500,000
As of 12/31/2015	41,500,000

Selected contribution history:

	<u>Employer A</u>	<u>All employers</u>
Sum of contributions for years 2010 to 2014	\$16,000,000	\$65,850,000
Sum of contributions for years 2011 to 2015	13,000,500	73,000,500

Employer A completely withdraws from the plan on 4/30/2015.

$X$  = Employer A's share of unfunded vested benefits due to the withdrawal.

Question 24

In what range is  $X$ ?

- (A) Less than \$9,150,000
- (B) \$9,150,000 but less than \$9,850,000
- (C) \$9,850,000 but less than \$10,550,000
- (D) \$10,550,000 but less than \$11,250,000
- (E) \$11,250,000 or more

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Data for Question 25 (3 points)

Normal retirement age: 62.

Early retirement eligibility: Age 60 with 5 years of service.

Early retirement benefit: Unreduced accrued benefit.

Pre-retirement death benefit: Present value of accrued benefits.

Plan assumptions:

Interest rate	7%
Mortality	Applicable mortality under IRC section 417(e)

Selected data for Smith:

Date of birth	1/1/1956
Date of hire	1/1/2006
Date of participation	1/1/2007
Date of retirement	1/1/2016
Compensation for each year of service	\$178,000

Selected annuity factors based on the mortality table:

	Interest rate	
	<u>5.0%</u>	<u>7.0%</u>
$\ddot{a}_{60}$	13.25	11.08
$\ddot{a}_{62}$	12.68	10.68

$X$  = Smith's annual IRC section 415 limit as of 1/1/2016.

Question 25

In what range is  $X$ ?

- (A) Less than \$160,000
- (B) \$160,000 but less than \$165,000
- (C) \$165,000 but less than \$170,000
- (D) \$170,000 but less than \$175,000
- (E) \$175,000 or more

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Data for Question 26 (4 points)

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

Smith and Jones each own 50% of the company, and are the only key employees in the company's history.

The valuation date of the defined benefit plan is 1/1.

Selected participant data:

	Smith	Jones	Total of non-key employees
Present value of accrued benefits at 1/1/2015	\$200,000	\$300,000	\$50,000
Present value of accrued benefits at 12/31/2015	0	350,000	100,000
Profit sharing account balances at 12/31/2015	100,000	400,000	200,000

Smith dies on 1/15/2015, and does not accrue any additional benefits in either plan for 2015.

On 2/1/2015, Smith's beneficiary is paid a death benefit of \$500,000 from the defined benefit plan.

Jones has been receiving annual payments of \$50,000 from the defined benefit plan on 2/1 of every year beginning in 2008.

There have been no other distributions from either plan.

$X$  = the ratio used to determine whether the plans are top-heavy in 2016.

Question 26

In what range is  $X$ ?

- (A) Less than 80.0%
- (B) 80.0% but less than 81.5%
- (C) 81.5% but less than 83.0%
- (D) 83.0% but less than 84.5%
- (E) 84.5% or more

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Data for Question 27 (3 points)

An employer sponsors two plans that are aggregated for IRC section 410(b) testing.

Plan A covers salaried employees; Plan B covers hourly employees.

Plan eligibility requirements:

	Salaried plan	Hourly plan
Age	21 years of age	18 years of age
Service	1 year of service	6 months of service

Selected employee data for 2016 plan year:

Number of employees		Salaried plan		Hourly plan	
Service	Age	HCEs	NHCEs	HCEs	NHCEs
Under 6 months	Under age 18	5	30	1	250
At least 6 months, but less than 1 year	At least age 18 but less than age 21	1	70	2	100
At least 6 months, but less than 1 year	At least age 21	10	10	5	25
At least 1 year	At least age 18 but less than age 21	50	80	6	100
Not covered, but otherwise non- excludable		5	20	5	15

$X$  = the total number of non-excludable employees from the selected employees.

Question 27

In what range is  $X$ ?

- (A) Less than 200
- (B) 200 but less than 300
- (C) 300 but less than 400
- (D) 400 but less than 500
- (E) 500 or more

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Data for Question 28 (2 points)

Selected information:

2016 required quarterly contribution	\$498,000
Stabilized rates, 1st segment rate	4.43%
Effective interest rate	6.00%
ERISA section 4044 for annuities, select rate	2.32%
PBGC Variable-rate premium, 1st segment interest rate	1.40%

The plan sponsor missed the first two quarterly payments for the 2016 plan year.

$X$  = the total unpaid contribution as of 7/15/2016 to determine whether a Form 200 must be submitted to PBGC.

Question 28

In what range is  $X$ ?

- (A) Less than \$996,000
- (B) \$996,000 but less than \$1,000,000
- (C) \$1,000,000 but less than \$1,004,000
- (D) \$1,004,000 but less than \$1,008,000
- (E) \$1,008,000 or more

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Data for Question 29 (3 points)

Selected plan provisions:

Plan effective date	1/1/2000
Vesting service	Plan years with at least 1,000 hours worked
Vesting schedule	7-year graded schedule

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

Data for participant Smith:

Date of birth	1/1/1985
Date of hire	1/1/2002

Employment history for participant Smith:

<u>Plan year</u>	<u>Hours</u>	<u>Plan year</u>	<u>Hours</u>
2002	1,600	2009	1,100
2003	1,200	2010	1,450
2004	1,350	2011	1,200
2005	400	2012	1,600
2006	0	2013	750
2007	0	2014	475
2008	950	2015	1,500

$X$  = Smith's years of vesting service as of 12/31/2008.

$Y$  = Smith's years of vesting service as of 12/31/2015.

Question 29

In what range is  $X + Y$ ?

- (A) Less than 7
- (B) 7 or 8
- (C) 9 or 10
- (D) 11 or 12
- (E) 13 or more

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Data for Question 30 (2 points)

Smith is an enrolled actuary who has Company A as a client.

Company B, which is not currently Smith's client, asks Smith to perform actuarial services for its plan.

Smith believes that there would be a conflict of interest if she performs the requested services for Company B.

She explains the situation to both Company A and Company B, and both orally waive the conflict of interest.

However, Smith believes that she would not be able to provide competent and diligent representation to Company B.

Assertion	Reason
Smith may not perform the requested services for Company B while continuing to perform services for Company A.	Waivers of conflict of interest must be in writing.

Question 30

Which of the following is true?

- (A) Both the assertion and reason are true, and the reason is a correct explanation of the assertion.
- (B) Both the assertion and reason are true, but the reason is not a correct explanation of the assertion.
- (C) The assertion is true, but the reason is false.
- (D) The assertion is false, but the reason is true.
- (E) Both the assertion and reason are false.

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Data for Question 31 (3 points)

A plan lends the employer \$100,000 on 10/1/2015. This is a prohibited transaction.

The terms of the promissory note for the loan include an interest rate of 9.0% per annum.

The promissory note specifies that the employer will pay interest annually and will repay the principal on 7/1/2018.

The market rate of interest for 2015 is 6.0%.

$X$  = the IRC section 4975 excise tax, if any, due for the taxable period in 2015.

Question 31

In what range is  $X$ ?

- (A) Less than \$300
- (B) \$300 but less than \$700
- (C) \$700 but less than \$1,100
- (D) \$1,100 but less than \$1,500
- (E) \$1,500 or more

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Data for Question 32 (2 points)

A plan offers a lump sum payment form.

Consider the following scenarios:

- I. The 2015 AFTAP is 65%. The 2016 AFTAP is certified at 55% on 3/1/2016.
- II. The 2015 AFTAP is 58%. The 2016 AFTAP is certified at 68% on 3/1/2016.
- III. The plan sponsor has been in bankruptcy proceedings under Title 11 of the United States Code since 2014. The 2015 AFTAP is 63%. The 2016 AFTAP is certified at 57% on 3/1/2016.

Question 32

Which, if any, of the above scenarios require(s) a notice to plan participants within 30 days of the certification?

- (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

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Data for Question 33 (2 points)

Consider the following statements:

- I. All plans of an employer are required to be aggregated for purposes of top-heavy testing.
- II. All plans of an employer in which a highly compensated employee participates are required to be aggregated for purposes of top-heavy testing.
- III. Plans with different plan years can be aggregated for top-heavy testing purposes.

Question 33

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 34 (3 points)

A plan sponsor filed for bankruptcy under Chapter 11 on 5/1/2015.

The plan terminates in a distress termination on 10/1/2015.

Plan valuation date: 12/31.

Participant counts as of indicated dates:

Date	Retirees	Terminated vested	Active vested	Active non-vested
12/31/2014	10	50	600	150
4/30/2015	11	55	560	145
9/30/2015	12	45	540	125

Assertion	Reason
The sum of the termination premiums payable to the PBGC is \$2,707,500.	The termination premium is based on the participant count immediately preceding the date of bankruptcy.

Question 34

Which of the following is true?

- (A) Both the assertion and reason are true, and the reason is a correct explanation of the assertion.
- (B) Both the assertion and reason are true, but the reason is not a correct explanation of the assertion.
- (C) The assertion is true, but the reason is false.
- (D) The assertion is false, but the reason is true.
- (E) Both the assertion and reason are false.

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Data for Question 35 (5 points)

Effective date: 1/1/2002.

Accrued benefit: 1/12% of compensation per month of service.

Plan year	AFTAP certification type	Date issued	AFTAP
2008	Specific	3/31/2008	91%
2009	Specific	9/30/2009	83%
2010	Specific	3/31/2010	75%
2011	Specific	9/30/2011	63%
2012	Range	3/31/2012	60% - 80%
2012	Specific	3/31/2013	61%
2013	Specific	7/1/2014	64%
2014	Range	9/30/2014	60% - 80%
2014	Specific	2/1/2015	67%
2015	Specific	3/31/2015	75%
2016	Specific	9/30/2016	82%

The plan does not provide for automatic retroactive restoration of benefit accruals for years during which a restriction under IRC section 436 was applicable.

The plan has never had a funding standard carryover balance or prefunding balance.

Data for participant Smith:

Date of birth	1/1/1965
Date of hire	1/1/2006
Compensation for all years of service	\$50,000 per year

$X$  = Smith's monthly accrued benefit as of 12/31/2016

Question 35

In what range is  $X$ ?

- (A) Less than \$300
- (B) \$300 but less than \$335
- (C) \$335 but less than \$370
- (D) \$370 but less than \$405
- (E) \$405 or more

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Data for Question 36 (5 points)

Selected plan provisions:

Normal retirement age	65
Early retirement eligibility	Age 60
Early retirement benefit	Accrued benefit, reduced 3% per year from age 65
Normal form	Life annuity
Optional form of payment	Qualified joint and 50% survivor annuity (QJSA)
Life annuity to QJSA conversion	95% at all ages

Nondiscrimination testing methods and assumptions:

Method	Benefit basis
Measurement period	Current plan year
Testing age	65
Snapshot date	12/31/2015
Standard interest rate	8.50%

Selected annuity values using testing assumptions:

Age	Life annuity	QJSA	Age	Life annuity	QJSA
60	9.29	9.90	63	8.76	9.44
61	9.12	9.75	64	8.57	9.27
62	8.94	9.60	65	8.38	9.09

Selected data for active participant Smith:

Date of birth	12/31/1955
Spouse's date of birth	12/31/1955
Date of marriage	12/31/1980
Annual testing compensation	\$50,000
Benefit accrued during 2015, payable at age 65	1,000

$X$  = Smith's most valuable accrual rate

Question 36

In what range is  $X$ ?

- (A) Less than 2.15%
- (B) 2.15% but less than 2.35%
- (C) 2.35% but less than 2.55%
- (D) 2.55% but less than 2.75%
- (E) 2.75% or more

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Data for Question 37 (3 points)

A plan sponsor opted out of the Small Plan Lookback Rule for PBGC Variable-rate premium purposes.

Selected information as of 12/31/2015

Number of active participants	30
Number of inactive participants	5

Selected information as of 1/1/2016:

Number of active participants	30
Number of inactive participants	5
Vested funding target using stabilized segment rates	\$850,000
Vested funding target not using stabilized segment rates	1,500,000
Market value of assets	450,000
Actuarial value of assets	495,000

$X$  = the total premium due to PBGC using the alternative method for 2016.

Question 37

In what range is  $X$ ?

- (A) Less than \$13,000
- (B) \$13,000 but less than \$18,000
- (C) \$18,000 but less than \$23,000
- (D) \$23,000 but less than \$28,000
- (E) \$28,000 or more

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Data for Question 38 (4 points)

Type of plan: Multiemployer.

Selected data for Employer A, who was party to a collective bargaining agreement beginning on 1/1/2004:

Year	Contribution base units	Hourly contribution rate
2004	400,000	\$1.30
2005	400,000	1.25
2006	390,000	1.25
2007	380,000	1.10
2008	250,000	1.10
2009	250,000	1.10
2010	190,000	1.45
2011	180,000	1.45
2012	165,000	1.45
2013	160,000	1.45
2014	155,000	1.65
2015	140,000	1.80

In 2010, Employer A ceased to be obligated to make contributions to the plan for one of its collective bargaining agreements.

It is determined that Employer A is required to make payments for 10 years due to a partial withdrawal.

$X$  = the annual partial withdrawal liability payment for Employer A.

Question 38

In what range is  $X$ ?

- (A) Less than \$260,000
- (B) \$260,000 but less than \$300,000
- (C) \$300,000 but less than \$340,000
- (D) \$340,000 but less than \$380,000
- (E) \$380,000 or more

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Data for Question 39 (3 points)

A plan sponsor has never sponsored a defined contribution plan.

Normal retirement age: 62.

Normal form of payment: Single life annuity.

Actuarial equivalence:

Interest rate	7.5%
Post-retirement mortality table	Applicable mortality under IRC section 417(e)

Selected data for participant Smith:

Date of birth	1/1/1954
Date of hire	1/1/2008
Date of participation	1/1/2009
Date of retirement	1/1/2016
Highest 3-year annual average compensation	\$9,000
Annual plan benefit at age 62, payable in normal form	8,000
Form of benefit elected	Actuarial equivalent 10-year certain & life ("10 C&L")

Actuarial factors at age 62, based on the mortality table and given interest rates:

Interest rate	<u>Life</u>	<u>10 C&amp;L</u>
5.0%	13.05	13.36
7.5%	10.52	10.79

$X$  = Smith's IRC section 415 limit as of 1/1/2016.

Question 39

In what range is  $X$ ?

- (A) Less than \$6,310
- (B) \$6,310 but less than \$6,810
- (C) \$6,810 but less than \$7,310
- (D) \$7,310 but less than \$7,810
- (E) \$7,810 or more

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Data for Question 40 (5 points)

The general test under IRC section 401(a)(4) is using a current plan year measurement period.

Testing is done using plan year compensation as testing compensation.

The plan uses a permitted disparity factor of 0.65% for all participants.

Participant data for 2015:

Group	Number	HCE/ NHCE	Plan compensation	Covered compensation	2015 accrual	Unadjusted accrual rate
A	5	HCE	\$255,000	\$81,000	\$5,875	2.30%
B	2	HCE	85,000	90,000	2,000	2.35%
C	1	HCE	250,000	99,000	6,750	2.70%
D	20	NHCE	78,000	69,000	1,850	2.37%
E	5	NHCE	55,000	105,000	1,700	3.09%
F	40	NHCE	60,000	102,000	1,200	2.00%

All participants were hired after 1985.

Each participant's normal accrual rate and most valuable accrual rate are equal.

$X$  = the ratio percentage for the rate group defined by Group C.

Question 40

In what range is  $X$ ?

- (A) Less than 20%
- (B) 20% but less than 40%
- (C) 40% but less than 60%
- (D) 60% but less than 80%
- (E) 80% or more

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Data for Question 41 (5 points)

Plan effective date: 1/1/1970.

Normal retirement benefit: \$75 dollars per month per year of service.

Pre-retirement death benefit: Present value of accrued benefit.

Actuarial equivalence:

Interest rate	5% per year
Pre-retirement decrements	None

Data for participants Smith and Jones:

	<u>Smith</u>	<u>Jones</u>
Date of birth	1/1/1949	1/1/1950
Date of hire	1/1/2005	1/1/1996
Date of retirement	1/1/2016	1/1/2016

Neither Smith nor Jones received any benefit before their respective dates of retirement.

Selected annuity factors, using actuarial equivalence assumptions:

$$\ddot{a}_{65} = 9.54$$

$$\ddot{a}_{66} = 9.23$$

$$\ddot{a}_{67} = 8.92$$

Neither Smith nor Jones received a suspension of benefits notice.

The plan provides for continued accruals after normal retirement date to be offset by actuarial increases on a year-by-year basis.

$X$  = the smallest monthly benefit that could be payable to Smith as of 1/1/2016.

$Y$  = the smallest monthly benefit that could be payable to Jones as of 1/1/2016.

Question 41

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

- (A) Less than \$690
- (B) \$690 but less than \$730
- (C) \$730 but less than \$770
- (D) \$770 but less than \$810
- (E) \$810 or more

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Data for Question 42 (3 points)

A plan sponsor opted out of the Small Plan Lookback Rule for PBGC Variable-rate premium purposes.

Date of plan termination: 6/1/2016.

Date PBGC became trustee of plan: 10/31/2016.

Number of active participants at 12/31/2015: 50.

Selected information as of 1/1/2016:

Number of active participants	50
Vested funding target using stabilized segment rates	\$850,000
Vested funding target not using stabilized segment rates	1,000,000
Market value of assets	450,000
Actuarial value of assets	495,000

$X$  = the Variable-rate premium due to PBGC using the alternative method for 2016.

Question 42

In what range is  $X$ ?

- (A) Less than \$10,000
- (B) \$10,000 but less than \$13,000
- (C) \$13,000 but less than \$16,000
- (D) \$16,000 but less than \$19,000
- (E) \$19,000 or more

**\*\*END OF EXAMINATION\*\***

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