
SOCIETY OF ACTUARIES
Design & Accounting Exam – U.S.

Exam RETDAU

AFTERNOON SESSION

Date: Thursday, April 26, 2018

Time: 1:30 p.m. – 3:45 p.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This afternoon session consists of 5 questions numbered 8 through 12 for a total of 40 points. The points for each question are indicated at the beginning of the question. Question 12 pertains to the Case Study, which is enclosed inside the front cover of this exam booklet.
2. Failure to stop writing after time is called will result in the disqualification of your answers or further disciplinary action.
3. 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.

Written-Answer Instructions

1. Write your candidate number at the top of each sheet. Your name must not appear.
2. Write on only one side of a sheet. Start each question on a fresh sheet. On each sheet, write the number of the question that you are answering. Do not answer more than one question on a single sheet.
3. The answer should be confined to the question as set.
4. When you are asked to calculate, show all your work including any applicable formulas.
5. When you finish, insert all your written-answer sheets into the Essay Answer Envelope. Be sure to hand in all your answer sheets because they cannot be accepted later. Seal the envelope and write your candidate number in the space provided on the outside of the envelope. Check the appropriate box to indicate morning or afternoon session for Exam RETDAU.
6. Be sure your written-answer envelope is signed because if it is not, your examination will not be graded.

CASE STUDY INSTRUCTIONS

The case study will be used as a basis for some examination questions. Be sure to answer the question asked by referring to the case study. For example, when asked for advantages of a particular plan design to a company referenced in the case study, your response should be limited to that company. Other advantages should not be listed, as they are extraneous to the question and will result in no additional credit. Further, if they conflict with the applicable advantages, no credit will be given.

****BEGINNING OF EXAMINATION****

Afternoon Session
Beginning with Question 8

- 8.** (7 points) Company ABC is changing its post-retirement health care plan to offer access to a private exchange for both pre-65 and post-65 retirees.
- (a) (2 points) Explain the differences in cost and coverage between pre-65 and post-65 retirees when offering access to a private exchange.
 - (b) (1 point) Identify four factors used to determine how much money an individual needs in retirement to cover health insurance premiums and expenses.
 - (c) (2 points) Explain how a participant of Company ABC's health care plan could estimate three of the factors listed in part (b).
 - (d) (2 points) Describe four actions Company ABC can take to make switching to an exchange easier for retirees.

9. (8 points) An executive for Company ABC is offered an international assignment for a ten-year period.

During her assignment, the executive is eligible for the following two participation options:

1. She can continue her participation in the Home Plan or;
2. She can elect to participate in the Host Plan and the International Pension Plan.

You are provided the following design features about the different retirement programs:

Design Feature	Home Plan	Host Plan	International Pension Plan
Type of Program	Defined Benefit – Monthly pension at retirement	Defined Contribution – Lump sum of accumulated fund balance at retirement	Choice of lump sum or monthly pension at retirement
Benefit Accrual	1.5% of final year's Earnings times years of service	Annual company contribution of 10% of Earnings	The International Pension Plan aims to keep the executive whole by covering any <u>positive</u> difference between: <ul style="list-style-type: none"> • The Home Plan benefit payable at time of retirement assuming all years of service in the Home Plan and; • The actual benefit payable at time of retirement from the Home Plan and the Host Plan for service accrued in these locations
Employee Contribution	5% of Earnings	Voluntary contribution of up to 5% of Earnings matched 100% by the company	N/A
Earnings Definition	Base salary only	Base salary plus bonus	N/A
Retirement Age	65	65	65
Social Security Benefit	Flat annual amount of \$15,000 payable upon retirement with minimum 25 years of service in the Home Plan. The amount is reduced by \$1,000 for each \$5,000 segment of other retirement income over \$50,000	Not eligible for duration of assignment	N/A
Funding Level per Last Actuarial Valuation Report	80% Funded	100% Funded; Contributions are invested in a wide choice of funds.	Unfunded

9. Continued

You are given the following information about the executive:

- Salary: \$150,000
- Annual bonus: \$100,000
- Age: 55
- Years of service: 20

Assume the executive plans to return home after her ten-year assignment to retire.

- (a) (5 points) Evaluate the plan design features for each participation option with respect to the benefit level and security from the perspective of the executive.

Justify your response.

- (b) (1 point) Recommend an option for the executive using your evaluation from part (a).

Justify your response.

Company ABC is considering terminating the International Pension Plan or selecting an external vendor for the administration of the Plan. The external vendor would require the International Pension Plan to be funded.

- (c) (2 points) Critique each option from the perspective of Company ABC.

Justify your response.

10. (6 points)

- (a) (2 points) List the ways an actuary may assist with domestic relations orders, as described in Actuarial Standard of Practice No. 34 (ASOP 34), Actuarial Practice Concerning Retirement Plan Benefits in Domestic Relations Actions.
- (b) (2 points) Describe the benefit provisions that should be addressed in a domestic relations order to ensure the benefits payable to each party will be definitely determinable.

You are Company ABC's actuary. One of your relatives is in the midst of divorce proceedings and is an employee of Company ABC.

- (c) (2 points) Describe considerations in determining if you can perform work related to a domestic relations order based on ASOP 34 and Precept 7 of the Society of Actuaries Code of Professional Conduct.

11. (12 points)

- (a) (3 points) Describe the differences between the Traditional Approach and the Spot Rate Approach for calculating Net Periodic Pension Cost under U.S. Accounting Standard ASC 715.

Company XYZ is considering moving from the Traditional Approach to the Spot Rate Approach.

- (b) (6 points) Currently, the yield curve is upward sloping. However, it is expected that in the long term, the yield curve will be downward sloping.

Explain the short term and long term impacts of moving from the Traditional Approach to the Spot Rate Approach on the:

- (i) Net Periodic Pension Cost
 - (ii) Accumulated Other Comprehensive Income
 - (iii) Projected Benefit Obligation
- (c) (3 points) Compare and contrast the impact of adopting the Spot Rate Approach under IAS 19, Rev. 2011 versus ASC 715.

Question 12 pertains to the Case Study.

12. (7 points)

- (a) (2 points) Describe the plan design characteristics of a deferred retirement option plan (DROP plan).
- (b) (2 points) Describe the advantages of a DROP plan from an employer and employee perspective.

NOC has decided to implement a DROP plan as an arrangement under its National Oil Full-Time Salaried Pension Plan as of January 1, 2019.

You are provided the following assumptions and information as of January 1, 2019 for Employee A, a participant in the Full-Time Salaried Pension Plan, who is considering participating in the DROP plan:

Age:	62
Service:	25 years
Current salary:	\$75,000
2018 earnings:	\$72,500
2017 earnings:	\$71,000
Best average earnings:	\$70,000
Assumed salary increase:	3.0% per year
Age 65 annuitization factor:	15.0
Rate of return on DROP plan:	6.5%
Timing of plan contributions:	Middle of the year

- (c) (3 points) Recommend whether Employee A should participate in the DROP plan or continue to accrue defined benefits assuming the employee retires at age 65.

Show all work.

****END OF EXAMINATION**
Afternoon Session**

USE THIS PAGE FOR YOUR SCRATCH WORK

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