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

# Exam RETDAU

## MORNING SESSION

**Date:** Thursday, May 5, 2016

**Time:** 8:30 a.m. – 11:45 a.m.

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### INSTRUCTIONS TO CANDIDATES

#### General Instructions

1. This examination has a total of 100 points. It consists of a morning session (worth 60 points) and an afternoon session (worth 40 points).

a) The morning session consists of 7 questions numbered 1 through 7.

b) The afternoon session consists of 5 questions numbered 8 through 12.

The points for each question are indicated at the beginning of the question. Questions 4 and 11 pertain 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\*\***  
**Morning Session**

- 1.** (8 points) Explain the implications of using pension plan surplus in lieu of making a cash contribution to fund the normal cost for a qualified defined benefit plan from the perspectives of the employees and the employer for each of the following:
- (a) (3 points) Funding
  - (b) (3 points) Accounting
  - (c) (1 point) Human Resources
  - (d) (1 point) Plan Investments

- 2.** (8 points) Company ABC is implementing a temporary lump sum option for the deferred vested participants in its defined benefit plan. This is a one-time offer and allows these participants to receive the present value of their deferred pension. Prior to the one-time offer, lump sums were not an available optional payment form under the plan.
- (a) (2 points) Describe four risks participants would face if they take the lump sum offer.
  - (b) (2 points) Describe strategies participants could employ to mitigate the risks identified in part (a).
  - (c) (4 points) Describe the accounting implications for Company ABC under U.S. Accounting Standard ASC 715 and International Accounting Standard 19.

- 3.** (8 points) Company XYZ sponsors a qualified defined benefit pension plan and is implementing an early retirement incentive program.
- (a) (4 points) Describe the steps involved in implementing an early retirement incentive program.
- (b) (4 points) Describe the advantages and disadvantages of implementing an early retirement incentive program from Company XYZ's perspective.

**Question 4 pertains to the Case Study.**

- 4.** (11 points) You are the actuary for NOC's pension plans. NOC's CFO has called you with an urgent request and provides the following information:
- Effective January 1, 2016, NOC terminated all participants in the Full-Time Salaried Supplemental Retirement Plan (SRP)
  - NOC replaced all terminated SRP participants with new employees, effective January 1, 2016, with the following demographics:
    - Average Age: 40
    - Average Annual Pay: \$200,000
    - The new employees participate in a defined contribution pension arrangement with both ERP and supplemental components. Employer contributions are 15% of annual pay.
  - As part of the condition of the termination, NOC will pay the terminated SRP participants a termination package including the following:
    - Lump sum payment of the value of their Salaried and SRP retirement benefits as of January 1, 2016, assuming all participants are credited with an additional 3 years of service.
  - NOC's cost of all other benefits (i.e. other than retirement benefits) for active employees average an additional 30% of pay.
- (a) (8 points) Approximate the increase or decrease resulting from these events on the following:
- (i) 2016 net periodic benefit cost for all of NOC's pension arrangements
  - (ii) 2016 net periodic benefit cost for the retiree health and welfare program
  - (iii) 2016 salary and other benefit costs

Show all work.

- (b) (3 points) Describe the appropriate U.S. Actuarial Standards of Practice requirements necessary to document your estimate.

**5.** (9 points) The characteristics of an acquisition are described below:

- Company A is acquiring Company B.
- Company A sponsors an open defined benefit (DB) pension plan.
- Company B sponsors a closed and frozen DB pension plan.
- Companies A and B have the same fiscal year and report accounting results under U.S. Accounting Standard ASC 715.
- Company A will be the plan sponsor of both DB plans following the acquisition of Company B.

- (a) (2 points) List items that Company A should collect regarding Company B's DB pension plan as part of the due diligence process.
- (b) (2 points) Describe the pension accounting impact of the acquisition for Company A.

Following the acquisition of Company B, Company A is considering merging the pension plans.

- (c) (2 points) Describe the advantages and disadvantages of merging the pension plans.
- (d) (3 points) Describe the accounting impact of merging the pension plans mid-year, including options for when the accounting impact may be measured.



- 6.** (8 points) Company LMN received the 2016 valuation report for its defined benefit plan and shortly thereafter terminated the signing actuary and hired a new actuary.

The signing actuary was later contacted by Company LMN's auditor to discuss the data, assumptions and methods used for the 2016 valuation because the disclosures were incomplete. The signing actuary declined to respond to the request because Company LMN did not pay for the valuation work.

- (a) (2 points) Explain the way(s) in which the signing actuary violated the American Academy of Actuaries Code of Professional Conduct.
- (b) (3 points) Summarize the signing actuary's responsibility as the Responding Actuary under Actuarial Standard of Practice No. 21.
- (c) (3 points) Describe the disclosures required in an actuarial report under applicable Actuarial Standards of Practice with respect to demographic assumptions.

**7.** (8 points) Your client is considering implementing a supplemental defined benefit retirement plan (SRP) for executives only, in addition to its existing qualified defined benefit pension plan that covers all employees.

(a) (5 points) Describe issues your client should consider when designing and implementing the SRP.

(b) (3 points) Your client has asked you to perform a SRP liability forecast based on the assumptions used in the accounting valuation for the qualified pension plan.

Critique the proposed method of selecting assumptions.

No calculations required.

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

**Morning Session**

**USE THIS PAGE FOR YOUR SCRATCH WORK**

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