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**SOCIETY OF ACTUARIES**  
**Design & Accounting Exam – Canada**

# Exam RETDAC

## AFTERNOON SESSION

**Date:** Thursday, November 2, 2017

**Time:** 1:30 p.m. – 3:45 p.m.

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### INSTRUCTIONS TO CANDIDATES

#### General Instructions

1. This afternoon session consists of 5 questions numbered 9 through 13 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 RETDAC.
6. Be sure your written-answer envelope is signed because if it is not, your examination will not be graded.

Tournez le cahier d'examen pour la version française.



## **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 9***

- 9.** (6 points) An employer sponsors a pension plan and a post-retirement benefits plan that includes medical and life insurance benefits. Both plans cover the same active population. The earliest retirement age for the post-retirement benefits plan is age 55 with at least 10 years of service.

The pension plan actuary confirmed that the same assumptions have been used for the pension plan and post-retirement benefits plan valuations.

You have been given the following pension plan assumptions:

Discount Rate	4.00%
Salary Scale	3.00%
Consumer Price Index	2.25%
Retirement Assumption	Age 65
Mortality Assumption	1994 Group Annuitant Mortality
Other Demographic Assumptions	None

- (a) (3 points) Critique the use of the pension plan assumptions for the post-retirement benefits plan.
- (b) (3 points) Describe other assumptions that may be necessary for a post-retirement benefits plan valuation.

**10.** (11 points) Company ABC is considering amending its defined benefit pension plan to include one of the following options for members who are eligible to retire under the plan:

Option A: Allow members to commence partial pension payments while working on a part-time basis

Option B: Allow members to fully retiree and return as full-time employees (no future pension accruals)

- (a) (6 points) Describe the advantages and disadvantages of both options from the perspective of:
- (i) Company ABC
  - (ii) the member
- (b) (5 points) Describe how Company ABC's assumptions under international accounting standard IAS No. 19, Rev. 2011 may be affected if Company ABC implements a phased retirement program.

**11.** (8 points) Company ABC is recruiting an executive who is 5 years from retirement.

Company ABC is considering offering the executive a 5-year contract with one of the following options:

Option 1: Base salary of \$750,000 with 50% target annual bonus paid in each year

Option 2: Base salary of \$600,000 with 40% target annual bonus paid in each year plus

- \$250,000 in restricted company stock in each year
- the restricted company stock vests after 3 years

Option 3: Base salary of \$500,000 with 0% target annual bonus paid in each year plus

- a total supplemental retirement benefit of \$3,000,000, payable in 5 equal annual installments
- the benefit does not vest until retirement
- the benefit is not funded

(a) (3 points) Compare and contrast the options from the perspective of:

(i) Company ABC

(ii) the executive

The executive has heard that there is a possible sale of Company ABC.

(b) (1 point) Describe the benefits of including golden parachute provisions in an executive employment contract.

(c) (4 points) Recommend four golden parachute provisions the executive should request during contract negotiations.

Justify your response.

No calculations required.

*Question 12 pertains to the Case Study.*

**12.** (9 points) NOC needs to reduce its full-time salaried workforce and is considering offering an Early Retirement Incentive Program (ERIP) through the National Oil Full-Time Salaried Pension Plan to participants who are at least age 55 with 15 or more years of service.

- (a) (1 point) Describe business and legal considerations NOC should review to determine whether to offer an ERIP.
- (b) (5 points) Describe the accounting implications under international accounting standard IAS 19, Rev. 2011, if NOC implements an ERIP.

No calculations required.

- (c) (3 points) Recommend two pension plan design enhancements for the National Oil Full-Time Salaried Pension Plan which could be included in the ERIP to enhance attractiveness of the program while mitigating the additional cost to NOC.

Justify your response.

- 13.** (6 points) The CFO of Company XYZ has asked the actuary to substantially adjust the mortality assumptions used in the accounting valuation to reduce the liabilities of the pension plan.
- (a) (2 points) Explain how changing a mortality table without analysis violates the Canadian Institute of Actuaries Rules of Professional Conduct.
  - (b) (1 point) Describe how the required statements of opinion in an external user report would need to be modified if the mortality assumption is adjusted based on the CFO's request.
  - (c) (3 points) Describe the considerations in setting an appropriate mortality assumption.

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



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