
SOCIETY OF ACTUARIES
Retirement Benefits Canada – Company/Sponsor Perspective

Exam CSP-RC

AFTERNOON SESSION

Date: Friday, May 3, 2013
Time: 1:30 p.m. – 4:45 p.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This afternoon session consists of 7 questions numbered 8 through 14 for a total of 60 points. The points for each question are indicated at the beginning of the question. Questions 8, 9 and 10 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.
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 since 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 CSP-RC.

Written-Answer Instructions

1. Write your candidate number at the top of each sheet. Your name must not appear.
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 8

Question 8 pertains to the Case Study.

- 8.** (7 points) NOC is concerned about the impact of rising health care costs on the sustainability of the Full-Time Salaried and Union Retiree Health Benefit Program. No changes to the retiree life insurance benefit are being contemplated at this time.
- (a) (2 points) Propose two plan design approaches that would reduce NOC's exposure to health care cost inflation and explain how each would protect against rising health care costs.
- (b) (5 points) NOC is considering changing the retiree health care benefit program by replacing the current program with a \$250,000 lump sum payment at retirement.

Describe the risks with this approach from the perspectives of both NOC and NOC's employees.

Question 9 pertains to the Case Study.

- 9.** (8 points)
- (a) (2 points) Describe the key elements of a dynamic investment policy.
- (b) (4 points) Describe the factors to be considered in employing a dynamic investment policy.
- (c) (2 points) Describe a dynamic investment policy that NOC could apply to the Full-Time Salaried Pension Plan.

Question 10 pertains to the Case Study.

10. (8 points) The CFO of NOC wants to de-risk the Full-Time Salaried Pension Plan by changing the current asset mix.

- (a) (2 points) Describe techniques to extend the duration of the current fixed income portfolio.
- (b) (2 points) Calculate the duration extension needed to achieve a hedge ratio of 50%.
- (c) (4 points) Given that current bond yields have been historically low, the CFO is concerned that it does not make sense to de-risk at this time.

Explain why adopting an LDI strategy may make sense even in a low bond yield environment.

11. (7 points) You are providing services to a new client whose prior actuary recently retired.

You have been provided the following sections of the last funding valuation report:

Plan Provisions:

- Vesting: Immediate on retirement and death
- Benefit formula: \$80 per month times pensionable service
- Normal retirement age: First of the month coincident or following age 65
- Early retirement reduction: 5% per year from age 65
- Normal form of pension: Single life annuity if single; joint and survivor annuity if married
- Termination and death benefit: Commuted value of accrued benefits
- Post-retirement indexing: 60% CPI each January 1st for retirements prior to September 1st before each increase

Assumptions:

- Interest rate: 7.5% per annum
- Inflation: 2.5% per annum
- Salary increases: 2.5% per annum (inflation plus merit and promotion)
- Retirement age: Plan experience from the last 50 years
- Mortality: GAM83 with full generational mortality projections
- Percent married: 50%
- Spousal age difference: Male spouse 3 years younger than female spouse

11. Continued

Membership Data as of December 31, 2012:

Active Members

- Number: 555
- Average age: 42 years
- Average service: 15 years
- Average annual earnings: \$43,000

Deferred Vested Members

- Number: 156
- Average age: 42 Years
- Average service: 9 years
- Average annual earnings at termination: \$33,000

Retirees/Surviving Spouses/Beneficiaries

- Number
 - Retirees: 850
 - Surviving spouses: 200
- Average age: 72 years

Critique the plan provisions, assumptions and data sections of the report. Refer to the Canadian Standards of Practice in your response.

- 12.** (12 points) XYZ Company sponsors a defined benefit pension plan that is significantly underfunded.

The CFO has mandated that XYZ must not have any defined benefit obligation in ten years. XYZ is considering the following strategies:

- (i) Wind-up the defined benefit pension plan immediately and replace it with a Group RRSP.
- (ii) Implement a dynamic investment strategy for the pension fund's assets whereby fixed income allocations are increased as funding thresholds are reached. Wind-up the plan at the end of the ten-year period.
- (iii) Make no changes and wind-up the pension plan at the end of the ten-year period.

Compare and contrast the risks from the perspectives of both XYZ and XYZ's employees.

- 13.** (8 points)

- (a) (5 points) Compare and contrast the impact that the Canadian Income Tax Act limitations have on retirement plan savings for the following Canadians:
 - (i) Members of defined benefit pension plans
 - (ii) Members of defined contribution pension plans
 - (iii) Individuals who are not members of any registered pension plan
- (b) (3 points) Compare and contrast the impact that the Canadian Income Tax Act limitations have on employer contribution deductions for the following types of pension plans:
 - (i) Defined benefit pension plans
 - (ii) Defined contribution pension plans

- 14.** (10 points) Acme Inc. sponsors a defined contribution pension plan for all of its employees.

Acme's CEO is concerned with the level of fees being paid to the current custodian. The CFO has suggested moving the defined contribution pension plan assets to his cousin's new small insurance company where fees are lower.

- (a) (5 points) Describe the considerations a company faces when changing service providers.
- (b) (5 points) Outline a governance process and explain how it could aid Acme in the selection of a custodian.

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

USE THIS PAGE FOR YOUR SCRATCH WORK

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