
SOCIETY OF ACTUARIES
Retirement Benefits Canada – Company/Sponsor Perspective

Exam CSP-RC

AFTERNOON SESSION

Date: Friday, November 2, 2012

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 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.
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. (9 points) NOC is considering adding the following phased retirement provisions to the National Oil Full-Time Salaried Pension Plan (Salaried Plan):

- An employee electing phased retirement may begin to receive his pension while continuing to work.
- The pension payable at age 60 is calculated according to the Salaried Plan formula and is not re-calculated at the end of the phased retirement period.
- Medical benefits are not provided during the phased retirement period.
- Post-retiree medical benefits are not payable until the end of the phased retirement period.

(a) (2 points) Describe two key advantages and two key disadvantages of the proposed phased retirement program from the perspective of NOC.

(b) (7 points) A full-time salaried employee is considering the phased retirement program.

You are given the following as of January 1, 2012:

Employee Data

Age:	60 years
Service:	30 years
Final Average Earnings:	\$50,000
2011 Medical Benefits Cost:	\$15,600
Estimated 2012 Phased Retirement Salary:	\$20,800

Assume no future changes in salary or medical benefits costs.

Compare and contrast the following options from the perspective of the employee:

- (i) Phased retirement
- (ii) Immediate retirement
- (iii) Continue to work full-time until normal retirement at age 65

Show all work.

9. (7 points) At the beginning of the year, XYZ Company's pension plan was fully funded on an accounting basis and XYZ implemented a liability-driven investment (LDI) strategy. Since that time, the pension plan has experienced a reduction in its funded ratio. The CFO has asked you to explain why this has happened. You do not know the specific LDI strategy that was implemented.

- (a) (3 points) Describe three LDI strategies that may have been implemented.
- (b) (4 points) For each of the LDI strategies listed in (a), explain possible reasons for the reduction in the funded ratio.

10. (7 points) A country is considering legislation that requires that defined benefit plans:

- Determine their funding valuation liabilities using a discount rate linked to long-term government bond yields; and
- Maintain a fully funded status.

Assess this legislative proposal from the perspectives of all stakeholders.

Question 11 pertains to the Case Study.

11. (7 points) XYZ Company's executives are concerned that their defined benefit Supplemental Retirement Plan (DB SRP) benefits may not be honored in a future change of ownership.

XYZ's CEO has asked you to assess the following options to address this concern:

- Option 1: Add change in control provisions to the DB SRP
- Option 2: Pre-fund the DB SRP

- (a) (5 points) Assess both options from the perspective of XYZ.
- (b) (2 points) Describe two Canadian funding vehicles that may be utilized to address the concerns of XYZ's executives.

- 12.** (12 points) ABC Company, a private enterprise, sponsors a non-contributory defined benefit pension plan registered in Ontario (RPP) and an unfunded non-registered supplementary retirement pension plan (SRP).

ABC adopted CICA 3461 for Private Enterprises (Part II) (the “Standard”) effective January 1, 2011 with a transition date of January 1, 2010.

At the transition date, ABC immediately recognized all accumulated past service costs, actuarial gains/losses, and unamortized transitional asset/obligation in opening retained earnings. No plans have been amended since January 1, 2010.

In accounting for employee future benefits, ABC is considering applying one of the following approaches:

- (i) Deferral and Amortization Approach, where ABC will amortize actuarial gains and losses outside the 10% corridor. ABC does not intend to use a market-related value of assets; and
- (ii) Immediate Recognition Approach.

Funding Valuation Results

You are given the following funding valuation results for the RPP:

	December 31, 2009	December 31, 2010
Fair value of assets	\$17,500,000	\$19,500,000
Going concern funding liabilities	\$22,200,000	\$23,000,000
Going concern current service cost	\$575,000	\$575,000
Discount rate	5.30%	5.30%

12. Continued

Best Estimate Valuation Results

ABC also obtained valuation results for both plans based on best estimate assumptions and a discount rate determined in accordance with the Standard:

	As of January 1, 2010		As of December 31, 2010	
	RPP	SRP	RPP	SRP
Fair value of assets	\$17,500,000	N/A	\$19,500,000	N/A
Accrued benefit obligation	\$20,000,000	\$12,000,000	\$23,500,000	\$15,000,000
Current service cost (BOY)	\$500,000	\$300,000	\$575,000	\$330,000
Discount rate	6.00%	6.00%	5.25%	5.25%
Expected return on assets	6.50%	N/A	6.00%	N/A
EARSL			11 years	11 years

You are also given:

- For both the RPP and SRP, the actual benefit payments for 2010 and the expected benefit payments for 2011 are \$200,000.
 - For the RPP, the actual employer contributions for 2010 and the expected employer contributions for 2011 are \$800,000.
 - The fair value of assets for the RPP as of December 31, 2011 is assumed to be \$18,000,000.
 - The accrued benefit obligation and funding liabilities for the RPP and SRP as of December 31, 2011 are assumed to be 110% of that as of December 31, 2010.
 - Employer contributions and benefit payments are paid in the middle of the year.
- (a) (6 points) Calculate the balance sheet asset/liability as of the transition date (i.e., January 1, 2010) and December 31, 2010 for the RPP and SRP under the two approaches. Show all work.
- (b) (6 points) Calculate the 2011 pension expense for the RPP and SRP under the two approaches. Show all work.

- 13.** (10 points) An individual is interested in saving for retirement and is considering whether to contribute 12% of his annual earnings each year into a Registered Retirement Savings Plan (RRSP) or a Tax-Free Savings Account (TFSA).

You are given the following information as of January 1, 2012:

Age:	60 years
Current earnings:	\$45,000
Annual increase in earnings:	3% per year
Expected return on investments:	5% per year
Inflation:	2% per year
Flat Tax rate:	29%
OAS benefit at age 65:	\$400 per month
OAS clawback:	30% for net income between \$30,000 and \$45,000 60% for net income between \$45,000 and \$55,000 80% for net income between \$55,000 and \$65,000 90% for net income between \$65,000 and \$75,000 100% for net income above \$75,000
Annual RRSP deduction limit:	\$22,450

Assume the following:

- Contributions are made at the beginning of the year.
 - Interest on investments is applied at the end of the year.
 - Tax refunds are contributed in the year following the original contribution.
 - No prior RRSP or TFSA room exists as of January 1, 2012.
 - No drawdown from the RRSP or TFSA occurs prior to age 65.
 - At age 65, 100% of the balance in the RRSP or TFSA is withdrawn.
 - No other registered plans exist.
- (a) (7 points) Based on the data above, calculate the amount of after-tax income for this individual when he attains age 65 if he chooses to either invest only in:
- (i) a RRSP
 - (ii) a TFSA
- Show all work.
- (b) (3 points) Describe situations in which a TFSA would be preferable to a RRSP.

- 14.** (8 points) ABC Company is selling one of its divisions to DEF Company as of January 1, 2012. Financial Services Commission of Ontario (FSCO) Policy A700-200 rules for asset transfers apply. Members and former members of ABC have clear entitlement to any surplus from the ABC pension plan.

You are given the following:

Total actuarial value of assets:	\$74,655,000
Total going concern liabilities:	\$80,000,000
Going concern liabilities (transferred members):	\$30,000,000

Total market value of assets:	\$90,000,000
Total solvency liabilities:	\$75,000,000
Total solvency liabilities (transferred members):	\$29,000,000

- (a) (3 points) Calculate the minimum and maximum asset transfer amounts. Show all work.
- (b) (5 points) Describe the risks if the assets and accrued benefits for the transferred members remain in ABC's pension plan from the perspectives of:
- (i) The plan participants
 - (ii) ABC Company
 - (iii) DEF Company

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

USE THIS PAGE FOR YOUR SCRATCH WORK

USE THIS PAGE FOR YOUR SCRATCH WORK