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**SOCIETY OF ACTUARIES**  
**Retirement Benefits Canada – Company/Sponsor Perspective**

# **Exam CSP-RC**

## **AFTERNOON SESSION**

**Date:** Friday, April 30, 2010

**Time:** 1:30 p.m. – 4:45 p.m.

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### **INSTRUCTIONS TO CANDIDATES**

#### **General Instructions**

1. This afternoon session consists of 7 questions numbered 7 through 13 for a total of 60 points. The points for each question are indicated at the beginning of the question. Question 8 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.
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 7*

- 7.** (8 points)
- (a) (5 points) Your client wishes to explore the options available for stock-based compensation. Describe the characteristics of:
- (i) stock purchase plans
  - (ii) incentive stock options
  - (iii) phantom stock plans
- (b) (3 points) Describe the risks that employees could face from participating in each of these types of plans.

<p><i>Question 8 pertains to the Case Study.</i> <i>Each question should be answered independently.</i></p>
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- 8.** (7 points) NOC is considering funding the National Oil Full-Time Salaried Supplemental Retirement Plan (SRP).
- (a) (4 points) Describe the advantages and the disadvantages associated with funding the SRP from the perspective of NOC and the SRP members.
- (b) (3 points) Describe four types of vehicles available for securing the SRP benefits. Assume that the funding vehicles available in Canada are also available in Gevrey.

- 9.** (7 points) You are the actuary for the XYZ defined benefit pension plan. XYZ's CFO has suggested that she would like to pursue an active bond mandate with a portion of the current domestic fixed income allocation.
- (a) (4 points) Describe the major sources of risk faced by actively-managed fixed income portfolios.
  - (b) (3 points) Describe the key considerations and best practices for XYZ to follow when conducting the search for an active bond manager.

- 10.** (8 points) The CFO of XYZ suggests that the company's defined benefit pension liabilities have a well-defined market-value that can be determined.

Outline supporting and opposing arguments for this statement.

**11.** (10 points) ABC, a Publicly Accountable Enterprise that sponsors various defined benefit pension plans in Canada, is expecting that the following two events will occur during the year 2010:

- On April 1, 2010, a pension plan improvement will be introduced that will increase the benefits to all active employees who will retire after July 1, 2010;
- An announcement will be made in the fall of 2010 to terminate 1,000 employees, effective February 1, 2011.

Effective for the fiscal year beginning January 1, 2011 and ending December 31, 2011, ABC will report financial results under IFRS for the first time.

ABC currently reports only under Canadian Generally Accepted Accounting Principles (GAAP). Under CICA 3461, ABC has adopted the following accounting policies:

- 10% corridor to amortize actuarial gains and losses;
  - straight line amortization of past service cost over the average future working lifetime of the active employees;
  - measurement date of September 30th for financial statements prepared at December 31st; and
  - market-related value of assets (average over 5 years) for the determination of the expected return on assets component of the expense each year.
- (a) (2 points) Describe the options available to ABC for transitioning to IFRS and adopting IAS 19 for the first time.
- (b) (8 points) Describe the differences between the comparative 2010 expense of the defined benefit plans of ABC under CICA 3461 and IFRS (IAS 19).

**12.** (8 points)

- (a) (2 points) Describe the non-investment related risks that Capital Accumulation Plan members are exposed to which are identified under the CAPSA Guideline No. 3.
- (b) (6 points) Critique the effectiveness of the CAPSA Guideline No. 3 in mitigating such risks.

**13.** (12 points) Maple Bank, a Canadian company, will add a defined contribution (DC) component to its OSFI-registered defined benefit (DB) pension plan. Members will be given the following options:

1. Retain an entitlement under the DB component which reflects past service and future earnings, and earn benefits under the new DC component beginning January 1, 2010, or
2. Participate in the DC component for all service. The value of the member's past service benefits would be transferred from the DB component to the DC component.

You are given the following information:

**DB Plan Provisions:**

Normal Retirement Age	65
Early Retirement Age	Age 55 with 2 years of plan membership
Employee Contributions	3% of earnings
Vesting	2 years of plan membership
Normal Retirement Benefits	1.5% of best average earnings for each year of credited service
Early Retirement Benefits	Accrued benefit reduced by 3% per year for each year prior to age 62
Normal Form of Benefits	Member with spouse: joint and 60% survivor pension, without reduction Member without spouse: life with 5 year guarantee
Indexing	Ad hoc
Termination Benefit	Accrued pension payable at age 65, with actuarial reduction prior to age 65
Pre-retirement Death Benefit	Commutated value of vested pension



### 13. Continued

#### DC Plan Provisions:

Vesting	Immediate
Employee Contributions	Minimum 3% of earnings, maximum 10% of earnings
Employer Contributions	3% of earnings, and 50% match on employee contributions in excess of 3%
Account Balance	Contributions are accumulated in member's individual account earning a rate of return based on investments elected by the employee
Benefit on Retirement, Termination or Death	Account Balance

- (a) (5 points) Describe the considerations required to develop an appropriate conversion basis for option 2.
- (b) (7 points) Given these plan provisions, describe how the conversion assumptions selected will affect the risks to the member under each of these two options.

**\*\*END OF EXAMINATION\*\***  
**AFTERNOON SESSION**



