
SOCIETY OF ACTUARIES
Retirement Benefits Canada – Company/Sponsor Perspective

Exam CSP-RC

AFTERNOON SESSION

Date: Friday, April 27, 2012

Time: 1:30 p.m. – 4:45 p.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This afternoon session consists of 7 questions numbered 9 through 15 for a total of 60 points. The points for each question are indicated at the beginning of the question. Questions 9 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 9

Question 9 pertains to the Case Study.

- 9.** (8 points) NOC is considering establishing an employee stock option (ESO) plan for its employees.
- (a) (3 points) Explain the impact of this proposal on NOC's financial statements and shareholder value.
- (b) (3 points) Describe models available to price ESOs.
- (c) (2 points) NOC would like to better understand the accounting implications associated with granting ESOs.

The CFO has presented you with the following hypothetical award terms:

- 100 options would be granted to a single employee.
- Options cliff vest 100% after two years.
- There are no expected forfeitures.
- The fair value of one option is \$8.00.
- Compensation expense is recognized annually.

Calculate the compensation expense that would be recognized in year 1 and year 2 in each of the following scenarios:

Scenario 1: the employee remains employed and vests in the awards after year 2.

Scenario 2: the employee terminates employment during year 2 and forfeits all 100 options.

Show all work.

- 10.** (8 points) Due to a recent increase in the funded status of its pension plan, a public sector organization is considering suspending employee and employer contributions. The organization is also considering investing 100% of the pension plan assets in bonds.
- (a) (4 points) Describe the advantages and disadvantages of the proposal to suspend contributions from the perspectives of both current and future taxpayers.
 - (b) (4 points) Describe the advantages and disadvantages of the proposal to invest 100% of the pension plan assets in bonds from the perspectives of both current and future taxpayers.

Question 11 pertains to the Case Study.

- 11.** (7 points) NOC is concerned that participants in the National Oil Full-Time Salaried Pension Plan (Salaried Plan) are delaying retirement.
- (a) (1 point) Describe potential reasons for delaying retirement from the perspective of the plan participants.

To address this concern, NOC is considering offering a voluntary retirement package to certain participants in the Salaried Plan. Eligible participants must attain age 55 with 20 years of service by December 31, 2012. The package would eliminate early retirement factors and add 3 years of service for benefit accrual purposes for eligible participants who retire by December 31, 2012.

- (b) (3 points) Describe the human resources risks to NOC of offering the voluntary retirement package.
- (c) (3 points) Describe the process to estimate the accounting impact to NOC of offering the voluntary retirement package.

- 12.** (7 points) XYZ Company currently reports under IAS 19 and will be adopting revised IAS 19 as of January 1, 2013. XYZ's finance department would like to better understand the implications.
- (a) (2 points) Describe the treatment of gains and losses under revised IAS 19 as related to the income statement, Other Comprehensive Income (OCI), and the balance sheet.
 - (b) (2 points) Describe how XYZ's pension investment strategy could impact its pension expense (defined benefit cost) under revised IAS 19.
 - (c) (3 points) Describe the changes to XYZ's pension disclosures as a result of the revisions to IAS 19.

- 13.** (12 points) ABC Company sponsors a 2% non-contributory final average earnings defined benefit pension plan. ABC is concerned with the current plan's cost and the volatility of plan contributions.

ABC is considering changing the current plan to one of the following options:

Option 1: Change the current plan prospectively to the following two-tier formula:

- Defined benefit: 1% of final average earnings for each year of credited service.
- Defined contribution: employee can contribute up to 5% of earnings with a company match of 50%.

Option 2: Wind up the current plan and replace it with a Group RRSP where ABC contributes 10% of earnings each year through additional payroll.

Option 3: Soft freeze (i.e., only service accruals are frozen) the defined benefit pension plan and introduce a prospective 10% employer-paid defined contribution plan.

Analyze the risks of each option from the perspectives of:

- (a) (6 points) ABC Company
- (b) (6 points) Plan participants

14. (10 points) Jane Smith participates in a Canadian registered defined benefit pension plan.

You are given the following:

- Full post-retirement indexation is provided upon termination and retirement.
- Options upon termination are either:
 - (i) A deferred monthly pension commencing at age 65; or
 - (ii) The commuted value of the accrued pension.
- The pension plan is currently fully funded on both going concern and solvency bases; and
- The pension plan is not in a jurisdiction with a pension guarantee fund.

Jane terminates from the plan at age 35.

You are also given the following:

Accrued pension: \$1,500 per month commencing at age 65
Expected return from personal savings: 4% per year
Annuity Factors:

Indexation	Current Age	Pension Commencement Age	Plan Factor	Insurance Company Factor
Non indexed	65	65	12.00	13.00
Fully indexed	65	65	15.00	16.00
Non indexed	35	65	4.00	5.50
Fully indexed from pension commencement age	35	65	5.00	6.00

- (a) (3 points) Calculate the values at age 65 of Jane's benefit in each of the following scenarios:
- (i) She elects the deferred pension.
 - (ii) She elects the commuted value and invests it.
 - (iii) She elects the commuted value and purchases an annuity from an insurance company commencing at and fully indexed from age 65.
- (b) (4 points) Describe the risks to Jane associated with each of the options.
- (c) (3 points) Describe ways to mitigate the risks identified in (b).

15. (8 points) You are ABC Company's consulting actuary. You recently filed the December 31, 2011 funding valuation report for its defined benefit pension plan. Subsequently, you have received the following information:

- The salary information since 2009 is inaccurate and cannot be relied upon.
- The last reliable valuation data you have on file is as of December 31, 2008.
- ABC completed an acquisition during 2011.

Describe the Canadian professional standards that may have been violated and any actions you must take as a result.

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

USE THIS PAGE FOR YOUR SCRATCH WORK