Exam RETDAC

Design & Accounting Exam – Canada

MORNING SESSION

Date: Wednesday, April 29, 2020
Time: 8:30 a.m. – 11:45 a.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This examination has a total of 100 points. It consists of a morning session (worth 60 points) and an afternoon session (worth 40 points).

   a) The morning session consists of 7 questions numbered 1 through 7.

   b) The afternoon session consists of 6 questions numbered 8 through 13.

   The points for each question are indicated at the beginning of the question. Question 5 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.

Recognized by the Canadian Institute of Actuaries.

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****
Morning Session

1. (*8 points*)

(a) (*2 points*) Critique funded versus unfunded supplemental executive retirement plans (SERP) from the following perspectives:

(i) Employer

(ii) Executive

(b) (*6 points*) Describe the tax implications of the following SERP funding options:

(i) Funded Retirement Compensation Arrangement (RCA)

(ii) Letter of Credit

(iii) Life Insurance

(iv) Annuity

2. (*11 points*) Company ABC sponsors a defined benefit pension plan. The plan formula varies based on an employee's date of hire:

- Employees hired prior to January 1, 2010: Final average pay with an annual cost of living indexation after retirement
- Employees hired on or after January 1, 2010: Career average pay with conditional cost of living indexation after retirement

(a) (*6 points*) Describe how the following risks differ between the two plan formulas:

(i) Inflation risk

(ii) Intergenerational risk

(iii) Risk that participants will not retire when expected

Company ABC is considering freezing accrued benefits with no future salary increases and changing the plan formula for future service for all employees effective January 1, 2021 to a defined contribution pension plan.

(b) (*3 points*) Compare and contrast the proposed plan design with respect to the risks from part (a) for the following at retirement:

(i) A 25 year old employee hired after January 1, 2021

(ii) An employee hired prior to January 1, 2010 within 10 years of retirement

(c) (*2 points*) Propose defined contribution pension plan features to improve employees' retirement income adequacy.

Justify your response.

3. (*10 points*)

(a) (*6 points*) Compare and contrast the Traditional and Spot Rate Approaches to calculating the following under U.S. Accounting Standard ASC 715 disclosures:

(i) Net Periodic Pension Cost

(ii) Accumulated Other Comprehensive Income

(iii) Projected Benefit Obligation

You are given the following:

Year	1	2	3	4	5
Expected Benefit Payments (end of year)	\$10,000	\$10,000	\$8,000	\$4,000	\$2,000
Spot Interest Rate	2.1% per annum	2.0% per annum	1.9% per annum	1.8% per annum	1.7% per annum

The Traditional Approach interest rate is 1.91% per annum.

(b) (*3 points*) Calculate the annual Interest Cost at the beginning of year 1 using the following approaches:

(i) Traditional Approach

(ii) Spot Rate Approach

Show all work.

(c) (*1 point*) Critique adopting the Spot Rate Approach in an inverted yield curve environment.

No calculations required.

4. (*11 points*)

(a) (*4 points*) Describe Multi-Employer Pension Plans (MEPPs) with respect to the following:

(i) Governance framework

(ii) Risk sharing structure

The Board of Trustees for a MEPP asked their actuary to perform a 10-year open group projection.

(b) (*3 points*) Explain four risks inherent in MEPPs that the actuary should consider when performing the projection.

The projection indicates the plan is expected to be in a surplus position in five years. The Board of Trustees is now considering how to utilize the projected surplus and is considering the following benefit improvements:

- Increase the flat dollar monthly pension unit for all members who are currently active.
- Introduce post-retirement cost of living indexing.

(c) (*4 points*) Describe factors the Board of Trustees should consider when evaluating each potential benefit improvement.

Question 5 pertains to the Case Study.

5. (*7 points*)

(a) (*3 points*) Describe the disadvantages of using the conventional earnings replacement ratio to measure retirement income adequacy.

You are given the following:

- The average annual working-life living standard is $60,000 for the average active National Oil Full-Time Pension Plan participant.
- A participant's only source of retirement income will be from the National Oil Full-Time Pension Plan.

(b) (*4 points*) Calculate the living standards replacement rate (LSRR) using the average demographic information as of January 1, 2020 for an active National Oil Full-Time Pension Plan participant at their Normal Retirement Date.

Show all work.

6. (*7 points*)

(a) (*1 point*) Describe the relationship between the arithmetic and geometric methods for determining the expected return assumption.

Company ABC sponsors a defined benefit pension plan. The CEO has selected an expected return assumption of 7.50% for the year end accounting report under U.S. accounting standard ASC 715.

(b) (*4 points*) Summarize the additional information required by the actuary to determine if this expected return assumption is reasonable under Actuarial Standard of Practice No. 27.

The actuary responsible for preparing Company ABC's pension plan disclosures can justify an expected return of 6.00% based on an analysis of the additional information provided by Company ABC. The CEO still insists on using 7.50%.

(c) (*2 points*) Describe the statements that must be disclosed by the actuary in the year end accounting report when using management's expected return assumption of 7.50%.

7. (*6 points*)

(a) (*2 points*) Identify the objectives of each public pension plan stakeholder.

The local government has proposed to freeze the non-contributory public defined benefit pension plan and replace it with a defined contribution plan with the following features:

- Required employee contributions
- Required employer contributions
- Employee directed investments

(b) (*4 points*) Describe the effect this proposal will have on the following stakeholders:

(i) Taxpayers

(ii) Plan members

(iii) Employer

****END OF EXAMINATION****
Morning Session

USE THIS PAGE FOR YOUR SCRATCH WORK

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