Exam RETDAC

Design & Accounting Exam – Canada

MORNING SESSION

Date: Thursday, May 2, 2019
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 8 questions numbered 1 through 8.

   b) The afternoon session consists of 6 questions numbered 9 through 14.

   The points for each question are indicated at the beginning of the question. Questions 7 and 8 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.

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.

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Exam RETDAC Front Cover

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. (*6 points*)

(a) (*2 points*) Compare and contrast the following types of projections for a defined benefit pension plan:

(i) Deterministic

(ii) Stochastic

(b) (*4 points*) Explain the rationale for performing projections for a public sector pension plan from the perspectives of the following stakeholders:

(i) Society/Taxpayers

(ii) Public Employees

(iii) Unions

(iv) Public Sector Employers

2. (*9 points*)

(a) (*3 points*) Describe six non-investment risks to which retirees may be exposed.

(b) (*3 points*) Describe a risk management strategy that retirees can apply for each risk identified in part (a).

Company ABC sponsors a post-employment health plan that has a calendar year fiscal year. Company ABC has decided to eliminate retiree contributions and increase the value of the medical benefit at June 30, 2019.

The plan change has the following impact for the remainder of the fiscal year:

	As of June 30, 2019
Increase in Defined Benefit Obligation	$650,000
Increase in Service Cost	$24,000
Increase in Expected Benefit Payments	$15,000
Decrease in Expected Retiree Contributions	$52,000
Discount Rate	3.75%

(c) (*3 points*) Calculate the impact of the plan change on the 2019 Defined Benefit Cost under International Accounting Standards IAS 19, Rev 2011.

Show all work.

3. (*5 points*)

(a) (*2 points*) List the communications and disclosure requirements of the Society of Actuaries Code of Professional Conduct for an actuarial report.

The entire assumptions section of a defined benefit pension accounting report is as follows:

Discount rate	Based on high-quality corporate bond yield curve
Expected long-term rate of return on assets	4.00%
Salary scale	4.00%
Mortality	Plan-specific mortality rates
Retirement	Varies based on age
Termination	Varies based on service
Disability	None assumed
Decrement timing	Mid-year
Optional form of payment	Straight life annuity; 10 year certain & life annuity
Actuarial cost method	Projected unit credit
Census data	As of January 1, 2019

(b) (*3 points*) Critique the adequacy of the above assumptions disclosure based on the following Actuarial Standards of Practice:

(i) No. 27, Selection of Economic Assumptions for Measuring Pension Obligations

(ii) No. 35, Selection of Demographic and other Noneconomic Assumptions for Measuring Pension Obligations

4. (*8 points*)

(a) (*2 points*) Describe four employer objectives when establishing a non-registered retirement plan.

Company ABC is proposing to freeze their defined benefit non-registered plan for executives and providing a new defined contribution non-registered plan for future service.

Key provisions are outlined below:

Provision	**Defined Benefit Plan**	**Defined Contribution Plan**
Benefit	2% of final average earnings (last 36 consecutive months of base salary)	18% of annual base salary and bonus, accumulated with interest credits
Contribution	100% Employer funded	100% Employer funded
Early Retirement Benefit	Reduced by 0.25% per month early retirement precedes age 60	Value of Notional Account
Form of Benefit	50% Joint and Survivor benefit	Paid in installments over 10 years
Pre-Retirement Death Benefit	Benefit paid in full to spouse over lifetime; If no spouse, none	Value of Notional Account paid to spouse; If no spouse, beneficiary
Post-retirement Indexing	Benefits indexed with inflation	None
Vesting	100% after 10 years of service	Immediate

(b) (*3 points*) Critique each of the plan provisions for the defined contribution plan from Company ABC's perspective.

Company ABC recently hired a single 30 year old executive with a significant portion of her compensation paid in bonuses.

(c) (*3 points*) Describe the advantages and disadvantages of the plan change from the executive's perspective.

5. (*10 points*) Company XYZ sponsors two defined benefit pension plans. Company XYZ is evaluating options that would reduce required cash funding and accounting costs in 2019.

Company XYZ's plans are subject to the following government rules:

- Cash funding - An annual cash contribution is required to fund to 80% funded on a wind up basis. No contributions are required if the plan is at least 80% funded on a wind up basis.
- Accounting - International Accounting Standard IAS19, Rev. 2011 applies.
- Plan Insurance - Pension plan benefits are insured by a governmental agency. Annual premiums equal $500 per participant which must be paid directly by the company and not out of plan assets.
- Plan Mergers - no restrictions.

Information for the two pension plans as of January 1, 2019 is as follows:

	Plan A	**Plan B**
Active and Deferred Vested Participant Count	300	100
Active and Deferred Vested Wind Up Liability	$60,000,000	$25,000,000
Retiree Participant Count	1,000	500
Retiree Wind Up Liability	$230,000,000	$115,000,000
Total Assets	$220,000,000	$126,000,000

Company XYZ's CFO has proposed merging the plans and purchasing buy-out annuities on January 1, 2019 for the Retirees in Plan A to reduce the annual government insurance premiums. Assume that Company XYZ is able to purchase annuities equal to the wind up liability.

(a) (*6 points*) Recommend one of the following actions for Company XYZ:

(i) Take no action

(ii) Only merge the plans

(iii) Merge the plans and purchase annuities

Justify your response and show all work.

(b) (*2 points*) Explain the accounting implications of your recommendation in part (a).

(c) (*2 points*) Describe how your recommendation would change if buy-in annuities were proposed instead of buy-out annuities.

6. (*8 points*)

(a) (*3 points*) Describe the advantages and disadvantages of the following savings vehicles from a participant's perspective:

(i) Defined contribution (DC) pension plan

(ii) Deferred Profit Sharing Plan

(iii) Group Registered Retirement Savings Plan

Company ABC sponsors a DC plan and would like to evaluate its effectiveness in providing adequate retirement income for its employees.

(b) (*2 points*) Describe key metrics Company ABC might use in its evaluation.

Based on the evaluation, Company ABC concluded it should focus on modifying its current investment offerings within the DC plan.

(c) (*3 points*) Describe the factors Company ABC should review in proposing changes to its investment offerings.

Question 7 pertains to the Case Study.

7. (*6 points)*

(a) (*3 points*) Critique the following assumptions used in the NOC Full-Time Hourly Union Pension Plan ("Hourly Pension Plan") accounting disclosures:

(i) Retirement Age

(ii) Termination Rates

(iii) Mortality Rates

The actuary proposed an accounting discount rate by matching the term of high quality corporate bonds issued in local currency with the cash flows of the Hourly Pension Plan obligations. The CFO of NOC has directed the actuary to use a higher discount rate.

(b) (*3 points*) Recommend a course of action to address the CFO's direction.

Justify your response.

Question 8 pertains to the Case Study.

8. (*8 points*)

(a) (*4 points*) Compare and contrast the features of Tax-Free Savings Accounts (TFSAs) and Registered Retirement Savings Plans (RRSPs).

Gevrey has allowed companies to offer group TFSAs and group RRSPs. NOC wants to implement an additional retirement savings plan that is tax-advantageous.

(b) (*4 points*) Recommend whether group TFSAs or group RRSPs would be more appropriate for the participants in the following plans:

(i) National Oil Full-Time Salaried Pension Plan

(ii) National Oil Part-Time DC Pension Plan

Justify your response.

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

USE THIS PAGE FOR YOUR SCRATCH WORK