
SOCIETY OF ACTUARIES
Design & Accounting Exam – Canada

Exam RETDAC

MORNING SESSION

Date: Thursday, April 30, 2015

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 5 questions numbered 9 through 13.

The points for each question are indicated at the beginning of the question. There are no questions in the Morning Session that pertain to the Case Study.

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.

Tournez le cahier d'examen pour la version française.

****BEGINNING OF EXAMINATION****
Morning Session

1. (8 points) An individual currently age 45 is planning to retire at age 65 with no company-sponsored pension plan.
- (a) (1 point) List four reasons an individual may need less gross income after retirement.

You are given:

Current salary rate:	\$75,000 per year
Assumed salary increases:	3% per year
Current savings:	\$0
Assumed rate of return on savings:	6.5% per year
Lump sum conversion factor at age 65:	11.65
Pre-retirement taxes and payroll deductions:	30% of gross income
Expenditures:	will go down by approximately \$9,000 per year after age 65
Post-retirement tax rate:	15% per year

- (b) (2 points) Calculate the replacement ratio required to maintain the individual's pre-retirement standard of living.

Show all work.

- (c) (5 points) Assume social security provides an annuity equal to 40% of age 65 pay.

Calculate the savings level, as a percent of pay, required to achieve a target replacement ratio of 70%.

Show all work.

2. (8 points) Your client is considering the following pension plan designs:

Option 1: A plan that targets a defined benefit at retirement, with fixed employer contributions and variable employee contributions that depend on the funded status of the plan.

Option 2: A defined benefit career average plan. Depending on the funded status of the plan, a career average benefit increase is considered annually.

- (a) (4 points) Compare and contrast both plan design options from the perspective of the plan sponsor to traditional:
- final average defined benefit plan designs; and
 - defined contribution plan designs.
- (b) (4 points) Compare and contrast the features and associated risks of both of the plan design options from the perspective of the plan participants.

3. (7 points)

- (a) (4 points) Describe the issues associated with using the assumed rate of return on plan assets as the discount rate to measure public sector defined benefit plan liabilities from the perspectives of:
- (i) taxpayers;
 - (ii) public employee unions; and
 - (iii) the government.
- (b) (3 points) Describe three methodologies for setting accounting discount rates for private sector defined benefit plans.

4. (9 points)

- (a) (3 points) Describe the considerations when evaluating whether to finance or fund non-registered pension plans.
- (b) (4 points) Describe the features of four financing or funding options for non-registered pension plans.
- (c) (2 points) Describe the considerations in choosing a financing or funding option for a non-registered pension plan.

5. (10 points) ABC Company is considering one of the following acquisitions and is performing its due diligence:

Factory	Description	Type of Pension Plan
A	Employees of Factory A participate in a company-sponsored pension plan with participants in other company-owned factories.	Final average defined benefit plan
B	Employees of Factory B participate in an industry-wide pension plan.	Flat dollar defined benefit plan
C	Employees of Factory C participate in a stand-alone company-sponsored pension plan.	Defined contribution plan

- (a) (6 points) Describe the issues associated with the treatment of benefits accrued up to the closing date for each potential acquisition from the perspectives of:
 - (i) Acquired employees; and
 - (ii) ABC Company.
- (b) (4 points) Describe the pension information required to perform due diligence for the acquisition of Factory A.

- 6.** (6 points) ABC Company is considering closing its current defined benefit supplemental executive retirement program (SERP) to new entrants and providing them with a defined contribution SERP.

Describe five issues ABC Company should consider when designing the defined contribution SERP.

- 7.** (6 points)

- (a) (3 points) Describe the factors that create cost pressures for multiemployer plans.
- (b) (3 points) Describe the options available to the Board of Trustees to address a funding shortfall in a multiemployer plan.

- 8.** (6 points)

- (a) (2 points) Explain why plan sponsors are reducing or eliminating their post-retirement health benefit plans.
- (b) (4 points) Critique the actuarial assumptions model used for post-retirement health benefit plan valuations given that benefits may be reduced or eliminated at any time.

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

USE THIS PAGE FOR YOUR SCRATCH WORK

USE THIS PAGE FOR YOUR SCRATCH WORK