INSTRUCTIONS TO CANDIDATES

General Instructions

1. This afternoon session consists of 6 questions numbered 8 through 13 for a total of 40 points. The points for each question are indicated at the beginning of the question. Question 10 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 RETDAU.

6. Be sure your written-answer envelope is signed because if it is not, your examination will not be graded.

Canadian version of this exam is recognized by the Canadian Institute of Actuaries.
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.
8. (4 points)

(a) (2 points) Define the following:

(i) Conventional Earnings Replacement Rate (ERR)

(ii) Living Standards Replacement Rate (LSRR)

(b) (2 points) Evaluate whether the LSRR is a more appropriate measure than the ERR.
9. (6 points)

(a) (3 points) Explain how longevity risk is shared between participants and plan sponsors within the following types of pension plans:

(i) Defined Benefit Plan
(ii) Defined Contribution Plan
(iii) Target Benefit Plan

(b) (3 points) Propose three approaches a plan sponsor can use to manage the longevity risk in a Target Benefit Plan.
Question 10 pertains to the Case Study.

10. (8 points) NOC offered a lump sum window during 2019.

You are given the following as of December 31, 2019:

<table>
<thead>
<tr>
<th></th>
<th>National Oil Full-Time Salaried Pension Plan</th>
<th>National Oil Full-Time Hourly Union Pension Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lump sums to be paid on December 31,</td>
<td>$100,956,000</td>
<td>$75,589,000</td>
</tr>
<tr>
<td>2019</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Projected Benefit Obligation for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>participants who will be paid lump</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sums on December 31, 2019</td>
<td>$98,543,000</td>
<td>$73,775,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All other data and assumptions remain the same as January 1, 2019. Contributions and all other benefits paid during 2019 were as expected.

Calculate the impact of the lump sum payments for both plans under U.S. Accounting Standard ASC 715 as of December 31, 2019 on the following:

(i) Funded Status

(ii) Net Periodic Pension Cost

(iii) Accumulated Other Comprehensive Income

Show all work.
11. (8 points)

(a) (2 points) Describe the advantages and disadvantages of funding a non-qualified defined benefit pension plan from a plan sponsor’s perspective.

(b) (2 points) Describe factors a plan sponsor should consider when selecting a funding arrangement for a non-qualified defined benefit pension plan.

(c) (4 points) Compare and contrast the following funding arrangements for non-qualified defined benefit pension plans:

(i) Rabbi Trust

(ii) Corporate-Owned Life Insurance

(iii) Taxable Securities

(iv) Secular Trusts
12. (6 points) Company ABC is based in the U.S. and has a large number of U.S. executives working outside of the U.S. Company ABC is considering offering a retirement benefit for these executives.

Describe the issues with respect to an International Pension Plan from the perspectives of the employees and Company ABC for each of the following:

(i) Design
(ii) Tax effectiveness
(iii) Funding
13. (8 points) You have taken over a client from an actuary who recently left your firm. After you review the January 1, 2018 accounting report signed by the prior actuary, you discover the following:

- The prior actuary used November 1, 2017 data with adjustments. The report stated that the data used was provided by the plan sponsor as of January 1, 2018 without further explanation.
- A plan amendment that significantly decreased the early retirement benefits was adopted July 1, 2017 and was effective January 1, 2018. The report does not refer to the plan amendment.
- There have been significant termination losses in the past five consecutive years.

(a) (3 points) List the reporting requirements that must be included in actuarial communications under the applicable professional standards.

(b) (3 points) Assess potential violations of the applicable professional standards.

(c) (2 points) Propose steps that should be taken to remedy the violations.

Justify your response.

**END OF EXAMINATION**

Afternoon Session
USE THIS PAGE FOR YOUR SCRATCH WORK