SOCIETY OF ACTUARIES
Retirement Benefits Canada – Company/Sponsor Perspective

Exam CSP-RC

AFTERNOON SESSION

Date: Friday, November 4, 2011
Time: 1:30 p.m. – 4:45 p.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This afternoon session consists of 7 questions numbered 8 through 14 for a total of 60 points. The points for each question are indicated at the beginning of the question. Questions 8, 9, 11, and 14 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 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.
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 8

Questions 8 - 9 pertain to the Case Study.

8. (*7 points*) Gevrey has implemented a mandatory government-run defined contribution plan. Under the plan, employers must contribute 5% of pay on behalf of their employees. Employers are exempt from the program if they sponsor a plan that is at least "actuarially equivalent" to the government-run plan. NOC has determined that its current plans satisfy the actuarially equivalent requirement.

NOC is considering the following options for providing pension benefits:

- Freeze accruals under the National Oil Full-Time Salaried Pension Plan (the "Salaried Plan") and participate in the government-run defined contribution plan.

- Allow current and future employees a one-time election to participate in either the government-run defined contribution plan or participate in the Salaried Plan.

Describe the risks to NOC and to NOC's salaried employees of the options under consideration.

Questions 8 - 9 pertain to the Case Study.

9. (*7 points*) On January 1, 2009, NOC negotiated a supplemental retirement agreement with an executive as follows:

- the executive of NOC has 30 years of service and will retire on December 31, 2011 when he will become vested; and
- a lump sum of $1,000,000 will be paid in two equal installments: $500,000 on January 1, 2012 and $500,000 payable on January 1, 2013.

On January 1, 2010, NOC revises the agreement so that the installments will be $750,000 each on January 1, 2013 and January 1, 2014. ($0 payable on January 1, 2012)

You are given the following:

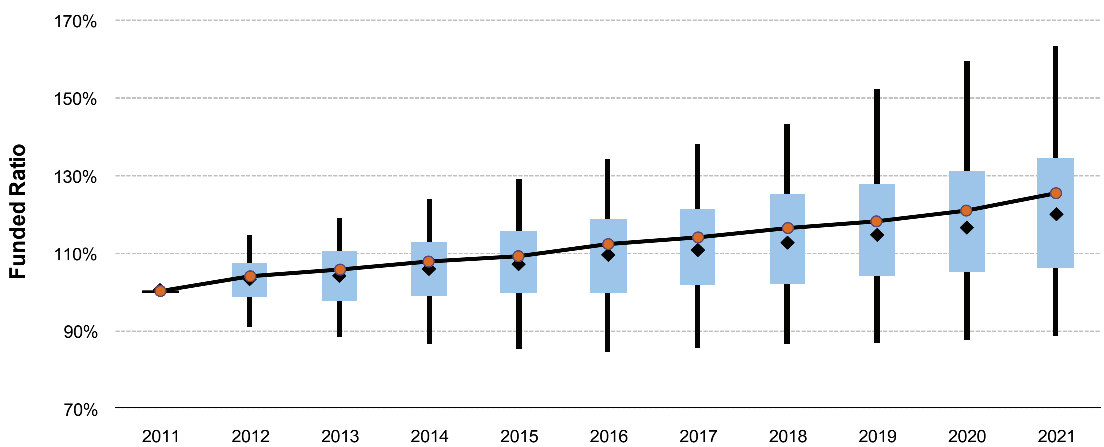
- the appropriate discount rate under CICA 3461 for this allowance is 3.5% per annum at January 1, 2009;
- the appropriate discount rate under CICA 3461 for this allowance is 2.5% per annum at January 1, 2010; and
- there are no pre-retirement mortality and turnover assumptions before retirement.

(a) (*3 points*) Determine the 2009 pension expense under CICA 3461. Show all work.

(b) (*4 points*) Determine the 2010 pension expense under CICA 3461. Show all work.

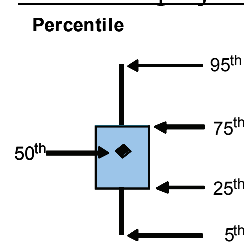
10. (8 *points*) Effective January 1, 2011, ABC Company closed its defined benefit pension plan to new members. Given the plan change, the CFO of ABC Company has asked you to perform some funded ratio projections under various asset allocations to help determine an appropriate DB asset allocation going forward.

You provide the CFO of ABC Company with the following exhibit that illustrates funded ratio projections under the current asset allocation through 2021.



<u>Deterministic projection using current assumptions</u>

<u>Stochastic projection</u>



(a) (*5 points*) Describe the process for performing deterministic and stochastic projections.

(b) (*1 point*) The CFO wants to know why the 50th percentile from the stochastic projection and the deterministic projection diverge over time. Outline your response to the CFO.

(c) (*2 points*) Based on the deterministic projection, the CFO says that it is not necessary to change the current asset allocation as the plan is expected to be more than 100% funded throughout the projection period. Outline the additional factors the CFO should consider prior to reaching such a conclusion.

Question 11 pertains to the Case Study.

11. (*8 points*) The Union representing hourly employees of various oil companies including NOC has expressed an interest in joining the Multiemployer Pension Plan for Companies in the Airline Industry (MEPPCAI). MEPPCAI has similar plan provisions to the NOC Full-Time Hourly Union Pension Plan.

You are given the following information about MEPPCAI:

Count of active participants: 50,000
Average age of active participants: 51.1
Count of pensioners (incl. beneficiaries): 200,000
Average age of pensioners (incl. beneficiaries): 71.4

Discount Rate: 8% per annum
Funded ratio: 70%

(a) (*4 points*) Describe the advantages and disadvantages to NOC's employees of joining MEPPCAI.

(b) (*4 points*) Assess the potential differences in the funding cost requirements between the NOC Full-Time Hourly Union Pension Plan and MEPPCAI. It is not necessary to calculate the funding cost.

12. (*10 points*) XYZ Inc. transitioned from CICA Accounting Standards to International Financial Reporting Standards ("IFRS") as at January 1, 2010.

XYZ Inc. is concerned about the impact of the limitation on the defined benefit asset under IAS 19.

You are given the following in respect of the defined benefit pension plan sponsored by XYZ Inc. as at January 1, 2010 under IFRS:

Plan assets:	$1,400,000
Obligation:	$900,000
Unrecognized losses:	$0
Unrecognized prior service costs:	$0
Present value of future IAS 19 current service costs:	$1,500,000
Present value of future funding current service costs:	$1,300,000
Present value of special payments:	$450,000

XYZ Inc. does not have an unconditional right to a refund of any surplus assets and has decided to immediately recognize actuarial gains/losses in OCI.

(a) (*4 points*) Describe the determination of the accrued benefit asset limit under CICA 3461.

(b) (*6 points*) Calculate the defined benefit asset or liability under IFRS (IAS 19 and IFRC 14) as at January 1, 2010. Show all work.

13. (*10 points*) Maple Co., a private sector company, is introducing a new defined benefit (DB) pension plan effective January 1, 2011 that will be registered in Ontario and under the Income Tax Act (Canada). All members are employed in Ontario.

The plan sponsor has proposed the following key plan provisions:

Pension benefit:	60% of final year earnings
Normal retirement age:	60
Earliest retirement age:	50
Early retirement reduction:	2% per annum from age 60
Bridge benefit:	Maximum Canada Pension Plan plus Old Age Security benefits
Employee contributions:	10% of earnings per annum
Post-retirement indexing:	3% per annum
Normal form:	Life with a 5-year guarantee
Portability of benefits:	Permitted upon termination and retirement
Termination benefit:	Commuted value of accrued benefit
Pre-retirement death benefit:	Commuted value of accrued benefit
Disability benefit:	Projected benefit at age 60 assuming earnings at the date of disability increase by 4% per annum; payable immediately with no reduction
Past service cost:	Service earned on and after January 1, 1996 will be recognized as pensionable service under the new DB pension plan at no cost to plan members

(a) (*6 points*) Assess whether each of the proposed plan provisions described above would be permissible under the Income Tax Act (Canada). Justify your response.

(b) (*4 points*) Maple Co. would like to provide the difference between the value of the plan provisions described above and the value of the benefits permissible under the Income Tax Act (Canada) as a lump sum payment upon retirement, termination or death. Describe the risks associated with this approach from the perspectives of both Maple Co. and its plan members.

Question 14 pertains to the Case Study.

14. (*10 points*) The government of Gevrey has recently introduced pension legislation that governs minimum and maximum funding rules for DB ERPs. Assume that the actuarial standards in Gevrey are identical to those in Canada.

(a) (*5 points*) Describe the impact that minimum funding rules may have on NOC and its plan members.

(b) (*5 points*) Describe how minimum and maximum funding rules may impact actuarial valuation reports prepared by NOC's actuary for its DB ERPs.

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

USE THIS PAGE FOR YOUR SCRATCH WORK

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