SOCIETY OF ACTUARIES
Retirement Benefits United States – Company/Sponsor Perspective

Exam CSP-RU

Date: Friday, May 9, 2008
Time: 8:30 a.m. – 1:15 p.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This examination has a total of 90 points.

   This exam consists of 10 questions, numbered 1 through 10.

   The points for each question are indicated at the beginning of the question. Questions 1 - 3, 6, 8 - 10, 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 Exam CSP-RU.

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

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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****
CSP-RU: RETIREMENT BENEFITS UNITED STATES
COMPANY/SPONSOR PERSPECTIVE

Questions 1 - 3 pertain to the Case Study

1. *(9 points)* NOC's executives are concerned with the increasing per capita claims cost and retiree medical expense in the Retiree Health and Welfare program.

(a) Propose alternative benefit provisions and evaluate how each alternative would address the issue of rising costs.

(b) Assume that the Retiree Health and Welfare program is changed effective July 1, 2007. This results in the following:

(i) Remeasurement at July 1, 2007
(ii) No change in the discount rate
(iii) A decrease in the APBO of $300,000,000 as of July 1, 2007
(iv) A decrease in the annual Service Cost of $15,000,000 beginning on July 1, 2007
(v) The Average Future Working Lifetime to FEA increases to 11 years
(vi) Average Future Working Lifetime to Retirement as of July 1, 2007 of 15.9 years
(vii) No impact on the 2007 expected benefit payments
(viii) No additional gain/loss at the remeasurement date

Evaluate the impact of the plan change on NOC's 2007 retiree medical expense.

Questions 1 - 3 pertain to the Case Study

2. *(8 points)* NOC is considering amending the National Oil Full-Time Salaried Pension Plan to allow for lump sum payments on retirement. The CFO of NOC has asked you for a deterministic projection of the expected benefit payments in future years under this proposed plan design. The results of the projection suggest that benefit payments are expected to triple over the next five years.

(a) Evaluate NOC's asset allocation policy based on the results of the deterministic projection.

(b) Evaluate the use of a stochastic projection instead of a deterministic projection in the asset allocation decision-making process.

Questions 1 - 3 pertain to the Case Study

3. *(9 points)* The Board of ABC Inc., a Vosne based company, has proposed a new SRP design for its existing and future senior executives. The SRP benefit is:

(i) An annual defined benefit equal to 2% × service × final earnings, offset by

(ii) the actuarially equivalent value of the shares earned under an executive stock plan (ESP) as of the date of retirement.

The ESP provides executives with company shares on a tax-deferred basis.

(a) Evaluate the risks associated with the proposed SRP design from the perspective of the senior executives and the company's shareholders.

(b) Describe the issues that will need to be considered in determining the appropriate FAS87 expense associated with the SRP.

4. *(13 points)* You are the investment advisor for a defined benefit pension plan sponsor. The CEO wishes to adopt an asset allocation policy which maximizes shareholders' value and has asked you which one of the following asset allocation policies better supports her goals:

Policy A: 100% of the plan assets in Asset Class 1, or
Policy B: 50% in Asset Class 1 and 50% in Asset Class 2.

You are given the following data and assumptions:

<u>Plan data</u>

⇒ Pension assets: $2.5 billion
⇒ Pension liabilities: $2.4 billion

<u>Plan sponsor's corporate balance sheet</u> (excluding plan assets and liabilities)

⇒ Assets: $4.0 billion
⇒ Liabilities: $3.6 billion

<u>Gross investment return assumptions</u>

⇒ Asset Class 1: 8% per annum
⇒ Asset Class 2: 5% per annum

<u>Taxes</u>

⇒ Individual and corporate income tax rate: 40%
⇒ Investment return tax rates:
- Asset Class 1: 15%
- Asset Class 2: 40%

⇒ Changes in shareholders' equity, including returns on plan assets, flow through to investors and are taxed at 15%

<u>Investors' portfolios</u>

⇒ Investors have a combined $30 billion invested in their individual portfolios and they rebalance their portfolios to maintain a 50% Asset Class 1 / 50% Asset Class 2 mix ($15 billion in Asset Class 1 and $15 billion in Asset Class 2)
⇒ Pension investments are transparent to shareholders

Using the augmented balance sheet model, make a recommendation regarding which policy best supports the CEO's goals. Show all work.

5. *(6 points)* It was recently discovered that the CFO unilaterally decided three years ago to invest 50% of the pension fund in the plan sponsor's stock. As the Chair of the Pension Committee of the Board, evaluate the flaws in the governance process and recommend changes to this process.

Question 6 pertains to the Case Study

6. *(7 points)* NOC is considering the following options with respect to the existing retirees of the National Oil Full-Time Hourly Union Pension Plan:

(i) Maintain the pension obligations within the plan
(ii) Purchase annuities from an insurance company
(iii) Transfer the obligations and assets to an association owned and managed by the retirees

Evaluate the risks associated with the above options from the perspective of NOC and the retirees.

7. *(8 points)*

(a) You are advising a new company that wishes to attract and retain a young specialized workforce. Analyze the key issues to be considered in assisting the company in deciding whether or not it should offer a defined contribution pension plan as an alternative to providing higher cash compensation.

(b) Assuming the company implements a defined contribution pension plan, describe the risks that employees will face at retirement and propose options to manage these risks.

Questions 8 – 10 pertain to the Case Study

8. *(10 points)* NOC is considering adopting one of the following two funding policies for the National Oil Full-Time Salaried Pension Plan.

Proposed Policy #1

- Funding normal cost

Proposed Policy #2

- Funding normal cost, plus
- Any additional contributions required to bring the plan to a funded ratio of 150% on a funding valuation basis

The plan is 140% funded on a plan termination basis. Assume that surplus belongs to the employer and that there is no excise tax on surplus reversion.

(a) Evaluate why NOC may want to adopt either of these proposed policies.

(b) Given the current funded position of the plan, the investment manager recommends an aggressive investment strategy. Analyze his recommendation from the perspective of all stakeholders.

(c) Assuming that NOC adopts the investment manager's proposal, recommend approaches for implementing aggressive equity investment tactics.

Questions 8 - 10 pertain to the Case Study

9. *(10 points)* The government of Vosne has mandated post retirement indexing for ERP's at the greater of CPI or 3%. The new indexation rules apply to defined benefit pensions earned on and after January 1, 2009. Assess how the new legislation will affect NOC's plans with respect to plan design, cost and investment.

Questions 8 - 10 pertain to the Case Study

10. *(10 points)* A number of NOC's competitors have recently implemented plan freezes. As a result, the CFO of NOC wants to implement a plan freeze for the National Oil Full-Time Salaried Pension Plan, and introduce a DC plan for future service.

(a) From the employer's and employees' viewpoints, critique the CFO's proposal considering the various types of plan freezes that are available.

(b) Describe the key accounting and funding issues for NOC to consider before adopting the CFO's proposal.

****END OF EXAMINATION****