
SOCIETY OF ACTUARIES
Retirement Benefits United States – Design & Pricing

Exam DP-RU

Date: Thursday, October 30, 2008

Time: 8:30 a.m. – 12:15 p.m.

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This examination has a total of 70 points.

This exam consists of 9 questions, numbered 1 through 9.

The points for each question are indicated at the beginning of the question. Questions 2 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 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 DP-RU.
6. Be sure your written-answer envelope is signed because if it is not, your examination will not be graded.

****BEGINNING OF EXAMINATION****
Retirement Benefits United States – Design & Pricing

- 1.** (10 points) Your client's 401(k) plan habitually fails the Actual Deferral Percentage (ADP) and Actual Contribution Percentage (ACP) nondiscrimination tests.
- (a) Explain in detail the steps involved in performing the ADP and ACP tests.
 - (b) Describe the 401(k) safe harbor design options available to employers.
 - (c) Describe three other ways in which an employer can increase the likelihood that their 401(k) plan will pass the ADP and ACP tests.

Question 2 pertains to the Case Study

- 2.** (10 points) You are the actuary for the NOC Full-Time Salaried and Union Retiree Health Benefit Program.
- (a) Describe the factors that go into setting the health-care cost trend assumption for this plan.
 - (b) Describe the features unique to retiree medical plans that must be taken into consideration in setting the demographic assumptions for retiree medical plans.
 - (c) Based on the January 1, 2008 valuation, perform a roll-forward valuation as of January 1, 2009.

Assume all 2008 valuation assumptions are still appropriate except that actual claim rates per capita in 2008 were 12% higher than in 2007.

Calculate the Accumulated Postretirement Benefit Obligation (APBO) as of January 1, 2009.

Show all work.

3. (7 points)

- (a) (1 point) Discuss the considerations in selecting appropriate investment manager performance benchmarks.
- (b) (2 points) Identify the types of investment performance benchmarks commonly used.
- (c) (4 points) Discuss the considerations in constructing and implementing a custom benchmark portfolio.

4. (7 points) As the population ages, employers are facing increasing challenges as they attempt to retain skilled labor.

- (a) Identify the prevalent features of retirement and postretirement benefit programs that can be an impediment to this goal.
- (b) Describe the ways in which retirement and postretirement benefit programs can be modified to help employers retain older workers.
- (c) Describe the barriers that can impede a successful phased retirement program for defined benefit plans.

5. (6 points) The government of Xanadu (“X”) commissioned a comprehensive study over the last three years and has concluded that the majority of its citizens will have inadequate income in retirement.

X differs from the United States in its current tax structure for retirement plans. There are no tax incentives for retirement arrangements in X.

- (a) Identify tax incentives X could introduce to entice employers to sponsor corporate-funded retirement plans.
- (b) Describe tax policies X could introduce to help employees build their retirement income.
- (c) Identify ways the government of X could mitigate lost tax revenue from implementing the incentives in (a) and (b).

6. (9 points) Your client's pension investment committee is exploring liability-driven investment strategies for its Salaried and Hourly Pension Plans. You are given the following information:

	Salaried Pension Plan	Hourly Pension Plan
Assets	\$950,000,000	\$600,000,000

	Salaried Pension Plan		Hourly Pension Plan	
	Liability	Duration	Liability	Duration
Active Members	\$400,000,000	15 years	\$300,000,000	18 years
Terminated Vested Members	\$100,000,000	20 years	\$100,000,000	20 years
Retired Members	\$400,000,000	8 years	\$300,000,000	10 years

- (a) (4 points) Compare and contrast the following investment strategies:
- (i) Dedication
 - (ii) Immunization
 - (iii) Horizon Matching.
- (b) (3 points) The committee is looking to minimize the volatility of the surplus measured at market value. Based on the data in the above tables, calculate the optimal duration of the assets for the Salaried Pension Plan and the Hourly Pension Plan.
- (c) (2 points) For each plan, explain whether an immunization strategy may be appropriate.

7. (8 points)

- (a) Define a labor market plan and identify the features that distinguish it from a social insurance arrangement and a private pension arrangement.
- (b) Compare and contrast labor market plans in Australia, Sweden and the Netherlands.

Question 8 pertains to the Case Study

8. (5 points) NOC is implementing the 409A Regulations for the SERP Plan. NOC's CFO has asked you to brief him on the legislation. Describe the implications of 409A on the CFO's retirement benefits.

9. (8 points)

- (a) Describe the structure and operation of a leveraged ESOP.
- (b) Discuss any special regulatory requirements relating to the structure and operation of a leveraged ESOP.
- (c) Evaluate the advantages and disadvantages of a leveraged ESOP from a plan sponsor's and a participant's points of view.

****END OF EXAMINATION****