

Retirement Design and Pricing Exam Syllabus Fall 2010 Canada

Important Exam Information:

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| Exam Date and Time | A 15 minute read-through time will be given prior to the start of the exam. |
| Exam Registration | Candidates may register online or with an application. |
| Study Note Order Form | Study notes are part of the required syllabus and are not available electronically. |
| Introductory Study Note | The Introductory Study Note has a complete listing of all study notes as well as errata and other important information. |
| Case Study-Updated 08.09.10 | This case study will also be provided with the examination. Candidates will not be allowed to bring their copy of the case study into the examination room |
| Past Exams | Past Exams from 2000-present are available on SOA web site. |
| Updates | Candidates should be sure to check the Updates page on the exam home page periodically for additional corrections or notices. |

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| Exam | Retirement DP |
| Instructional Objectives | |
| 1. The candidate will be able to analyze different types of registered/qualified defined benefit and defined contribution plans, as well as retiree health plans. | |
| Learning Outcomes | |
| <p>The candidate will be able to:</p> <ol style="list-style-type: none"> a) Describe the structure of the following plans: <ul style="list-style-type: none"> ▪ Fixed dollar and pay-related defined benefit plans ▪ Hybrid plan designs such as, cash balance, pension equity, and floor offset plans, flexible pension plans, target benefit plans ▪ Defined contribution plans including 401(k) plans and capital accumulation plans ▪ Retiree Health Plans b) Describe the process and apply the principles of conversions from one plan type to another c) Apply methods of the integration of government-provided benefits with retirement plan designs d) Given a plan type, explain the relevance and range of plan features including the following: <ol style="list-style-type: none"> i) Plan eligibility requirements ii) Benefit eligibility requirements, accrual, vesting and phased retirement iii) Benefit / contribution formula iv) Payment options and associated adjustments to the amount of benefit v) Ancillary benefits vi) Benefit subsidies and their value, vested or non-vested vii) Participant investment options viii) Required and optional employee contributions ix) Phased retirement and DROP plans | |
| Syllabus Resources | |
| <ul style="list-style-type: none"> ○ Allen et al., <i>Retirement Plans, 401 (k)s IRAs, and Other Deferred Compensation Approaches</i>, 10th Edition, 2008, Ch. 3, DC v DB Plans, pp (49-50 only) and Ch. 21 ○ Morneau Sobeco, <i>Handbook of Canadian Pension & Benefit Plans</i>, 14th Edition, 2008, Chapters 1, 2 and 12 ○ Towers Watson, <i>Canadian Pensions and Retirement Income Planning</i>, 4th Edition, 2010, Ch. 1, pp. 29-33, 39-47 and all of Ch. 23. | |

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Candidates may also use the Watson Wyatt, *Canadian Pensions and Retirement Income Planning*, 3rd edition, 2006, Ch.23, pp. 365-392.

- Yamamoto, *Fundamentals of Retiree Group Benefits*, 2006, Ch 4 (pp 57-68 and pp 90-115 only), Ch. 5 (pp. 117-133 and 144-149 only)
- R-D100-07: Multi-Employer Plans
- R-D101-07: Converting Pension Plans from DB to DC
- R-D601-07: Canadian Pension Plan Design

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| Exam |
| Instructional Objectives |
| 2. The candidate will be understand how the regulatory environment affects plan design and understand how to apply relevant restrictions. |
| Learning Outcomes |
| <p>The candidate will be able to, for the designated region:</p> <ol style="list-style-type: none"> a) Explain and apply the regulatory limits placed on types of plans that can be offered b) Explain and apply restrictions on plan design features to a proposed plan design c) Explain and test for limits on plan designs and features that protect participant rights d) Test for plan design restrictions intended to control the use of tax incentives e) Calculate the limitations on payout options f) Explain and apply rules governing the conversion from one type of plan to another |
| Syllabus Resources |
| <ul style="list-style-type: none"> o Morneau Sobeco, <i>Handbook of Canadian Pension & Benefit Plans</i>, 14th edition, 2008, Chapters 2, 8, 9, 11, 12 o Turner, <i>Pension Policy: The Search for Better Solutions</i>, 2009, Ch. 5, pp.93-94 o Towers Watson <i>Canadian Pensions and Retirement Income Planning</i> , 4th Edition, 2010, Ch. 1, 2, 5-8, 10-14, 16-21, 23 Candidates may also use the Watson Wyatt, <i>Canadian Pensions and Retirement Income Planning</i>, 3rd Edition, 2006, Chapters 1, 2, 5-12, 14-18, 21-23 o R-D600-10: Ontario Pension Benefits Act R.R.O 1990, Regulation 909 (Financial Services Commission of Ontario) o R-D606-07: OSFI Policy on Conversion – Guideline for Converting Plans from DB to DC o R-D610-09: Towers Perrin Summary of Minimum Standards for Phased Retirement Under Registered pension Plans o R-D611-09: Not Just a Phase, <i>Benefits Canada.com</i> o R-D612-10: Ontario Pension Benefits Act, R.S.O.1990, Chapter P.8 o R-D614-09: CSOP 3800, April 2009 |

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| Exam |
| Instructional Objectives |
| 3. The candidate will be able to analyze plans designed for executives or the highly paid |
| Learning Outcomes |
| The candidate will be able to: a) Given a specific context, apply principles and features of executive deferred compensation retirement plans. b) Given a specific context, apply principles and features of supplemental retirement plans c) Integrate a plan for executives with the basic benefit plan |
| Syllabus Resources |
| <ul style="list-style-type: none">o Allen et al., <i>Retirement Plans, 401 (k)s IRAs, and Other Deferred Compensation Approaches</i>, 10th Edition, 2008, Ch. 14, pp. 247–260o Morneau Sobeco, <i>Handbook of Canadian Pension & Benefit Plans</i>, 14th Edition, 2008, Ch. 11o Towers Watson <i>Canadian Pensions and Retirement Income Planning</i>, 4th Edition, 2010, Ch. 16, pp. 313, Ch. 17 pp. 376-378, Ch. 18, pp. 390-393. Candidates may also use the Watson Wyatt, <i>Canadian Pensions and Retirement Income Planning</i>, 3rd Edition, 2006, Ch 14 p.266 only, Ch. 15 pp.320–322 and Ch.16 pp. 332–334.o R-D103-07: Should Variable Pay Count Towards Benefits Calculationso R-D602-07: Funding Supplementary Pension Plans, Marcel Theroux, Canadian Tax Foundation, 1996 Annual Conference, Tab 61o R-D603-07: Securing Supplemental Retirement Arrangementso R-D604-07: Creative Compensation Arrangements for Private Corporations, Marcel Theroux, Canadian Tax Foundation, 1998 Ontario Conf., Tab 10o R-D616-09: Executive Compensation, Medland and Lexpert |

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| Exam |
| Instructional Objectives |
| 4. The candidate will understand alternative plan types that occur internationally |
| Learning Outcomes |
| The candidate will be able to: a) Compare different plan types and features b) Give examples of the structure of different plan types c) Give examples of plans that could work for multinational companies and their employees including third country nationals and expatriates |
| Syllabus Resources |
| <ul style="list-style-type: none">○ Turner, <i>Pension Policy: The Search for Better Solutions</i>, 2009, Ch. 1, pp.4-11, Ch. 2, pp.29-31, Ch. 4○ R-D104-07: The Globalization of Employee Benefits○ R-D105-07: Labor Market Plans○ R-D107-07: The European Pensions and Benefits Environment: A Complex Ecology○ R-D108-07: Pension Challenges and Pension Reforms in OECD Countries○ R-D136-10: The Trend to a Global TCN Benefits Program |

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| Exam |
| Instructional Objectives |
| 5. The candidate will be able to apply/synthesize the various methods used to value a pension plan or retiree health plan for the purposes of the valuation. |
| Learning Outcomes |
| <p>The candidate will be able to:</p> <p>a) Differentiate between the various purposes for valuing pension plans:</p> <ul style="list-style-type: none"> i) Budgeting ii) Funding iii) Accounting iv) Solvency v) Termination/wind-up vi) Economic value <p>b) Perform periodic valuations of ongoing plans, calculating normal cost and actuarial liability, using the variety of cost methods for budgeting, funding, accounting and measuring economic value.</p> <p>c) Analyze and communicate the pattern of cost recognition that arises under a variety of funding and asset valuation methods.</p> <p>d) Perform valuations for special purposes, including:</p> <ul style="list-style-type: none"> i) Plan termination/windup ii) Solvency valuations iii) Open group valuations <p>e) Assess the impact of using various cost methods in a given context.</p> |
| Syllabus Resources |
| <ul style="list-style-type: none"> o Anderson, <i>Pension Mathematics for Actuaries</i>, Third Edition, 2006, Ch. 1-4, 6, 7 o Morneau Sobeco, <i>Handbook of Canadian Pension & Benefit Plans</i>, 14th Edition, 2008, Ch. 5 o Towers Watson <i>Canadian Pensions and Retirement Income Planning</i>, 4th Edition, 2010, Ch. 15. Candidates may also use the Watson Wyatt, <i>Canadian Pensions and Retirement Income Planning</i>, 3rd Edition, 2006, Ch. 13 o Yamamoto, <i>Fundamentals of Retiree Group Benefits</i>, 2006, Ch. 9 pp 287-294 only o R-D109-07: Financial Economics and Canadian Pension Valuation, September 2006 paper by CIA Task Force on Financial Economics o R-D110-07: <i>Pensions in the Public Sector</i>, Mitchell & Hustead, Ch. 3 pp 56-61 only |

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- R-D127-09: ASOP #6 Measuring Retiree Group Benefit Obligations
- R-D600-10: Ontario Pension Benefits Act R.R.O 1990, Regulation 909 (Financial Services Commission of Ontario)
- R-D607-07 Pension Surplus and Deficit Funding: Funding of Multi-Employer Plans
- R-D612-10: Ontario Pension Benefits Act R.S.O. 1990, Chapter P.8
- R-D613-09: CSOP 1000-1800, February 2009
- R-D614-09: CSOP 3000-3800, April 2009
- R-D615-09: CSOP 6000-6600, April 2009
- CIA Education Note: Guidance on Asset Valuation Methods, November 2007
<http://www.actuaries.ca/members/publications/2007/207102e.pdf>
- Pension Forum 9/2002 on asset method Ch. 1,3,4,5 <http://www.soa.org/library/newsletters/pension-forum/2002/september/pfn0209.pdf>
- 8/2001 Pension Forum, "Dynamic Pension Plan Valuation", p. 71-82, <http://www.soa.org/library/newsletters/pension-forum/2001/august/pfn0108.pdf>

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| Exam |
| Instructional Objectives |
| 6. The candidate will be able to analyze/synthesize the factors that go into selection of actuarial assumptions. |
| Learning Outcomes |
| <p>Given a context and/or data, the candidate will be able to:</p> <ol style="list-style-type: none"> a) Evaluate actual experience, including comparisons to assumptions b) Adjust current assumptions, given past experience and trends c) Evaluate appropriateness of current assumptions given the purpose. d) Describe and explain the differences between a traditional and a financial economics perspective on the selection of assumptions e) Evaluate the appropriateness of actuarial assumptions using both a traditional and a financial economics perspective f) Describe and apply the building of economic assumptions g) Assess and explain the effect that the assumptions selected had on valuation results. h) Recommend appropriate assumptions for a particular type of valuation (e.g., ongoing, termination, etc.) and defend the selection. i) Select demographic and economics assumptions appropriate for a sensitivity analysis j) Select demographic and economic assumptions appropriate for a projection valuation designed for a given goal |
| Syllabus Resources |
| <ul style="list-style-type: none"> o Yamamoto, <i>Fundamentals of Retiree Group Benefits</i>, 2006, Ch 9 (pp 256-278 only) o R-D109-07: Financial Economics and Canadian Pension Valuation, CIA Task Force on Financial Economics o R-D112-10: 2009 Selection of Actuarial Assumptions, Consultant Resource Manual, Mercer, omit pages 13-31, 34-37 and 63-64 o R-D114-07: An Introduction to Duration for Pension Actuaries o R-D115-07: Reinventing Pension Actuarial Science with discussion o R-D117-07: Pension Projections o R-D125-09: ASOP #35 Selection of Demographic and other Noneconomic Assumptions for Measuring Pension Obligations o R-D126-09: ASOP #27 Selection of Economic Assumptions for Measuring Pension Obligations o R-D127-09: ASOP #6 Measuring Retiree Group Benefit Obligations |

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- R-D129-09: How the Liability Benchmark is Developed and used in Practice
- R-D137-10: Discounting State and Local Pension Liabilities
- R-138-10: Assessment and Selection of Actuarial Assumptions for Measuring pension Obligations, Ch. 2 and 3 only
- R-D607-07: Pension Surplus and Deficit Funding: Funding of Multi-Employer Plans
- R-D608-09: CICA 3461 paragraphs .047 to .065, (Q&A 36-58 for background only)
- R-D609-07: Pension Funding Exercises (background only)
- R-D613-09: CSOP 1000-1800, February 2009
- R-D614-09: CSOP 3000-3800, April 2009
- R-D615-09: CSOP 6000-6600, April 2009
- A Practical Approach to Gains Analysis Revisited by Andrew Smith, *Pension Section News*, Sept. 93, <http://www.soa.org/library/newsletters/pension-section-news/1993/september/psn9309.pdf>
- A Practical Approach to Gains Analysis by Josiah Lynch – *TSA Vol 27* pp.423-439, <http://www.soa.org/library/research/transactions-of-society-of-actuaries/1975/january/tsa75v2717.pdf>
- Jan 05 Pension Forum – entire, <http://www.soa.org/library/newsletters/the-pension-forum/2005/january/pfn0501.pdf>
- 8/2001 Pension Forum, “A Look at Dynamic Pension Plan Valuation, 71-82 <http://www.soa.org/library/newsletters/pension-forum/2001/august/pfn0108.pdf>
- CIA Education Note – Assumptions for hypothetical Wind-Up and Solvency Valuations with Effective Dates Between July 31 2009 and December 30, 2009 <http://www.actuaries.ca/members/publications/2009/209109e.pdf>
- SOA Long Term Healthcare Trends Resource Model, Practical Issues for Actuaries, <http://www.soa.org/files/pdf/research-soa-health-model.pdf>
- Modeling Long Term Healthcare Cost Trends, Getzen <http://www.soa.org/files/pdf/research-getzen-health-cost.pdf>
- CIA Education Note on Selection of Mortality Assumptions for Pension Plan Actuarial Valuations, March 2008 <http://www.actuaries.ca/members/publications/2008/208014e.pdf>
- Measuring Terminable Postretirement Obligations <http://www.soa.org/library/journals/north-american-actuarial-journal/2005/january/naaj0501-7.pdf>

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| Instructional Objectives |
| 7. The candidate will be able to analyze data for quality and appropriateness. |
| Learning Outcomes |
| Given a context, the candidate will be able to: a) Assess data quality b) Identify data needed c) Make appropriate assumptions where data cannot be provided |
| Syllabus Resources |
| <ul style="list-style-type: none">o R-D130-09: ASOP 23 – Data Qualityo R-D613-09: CSOP 1000-1800, February 2009 |

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| Instructional Objectives |
| 8. The candidate will be able to evaluate the actuarial considerations in plan options and administration. |
| Learning Outcomes |
| The candidate will be able to: a) Assess the gain/loss from options offered, including: <ul style="list-style-type: none">▪ Phased retirement▪ Postponed retirement▪ Early retirement▪ Option factors▪ DROPs b) Assess the impact of applicable regulation, including: <ul style="list-style-type: none">▪ Commuted value standard |
| Syllabus Resources |
| <ul style="list-style-type: none">○ R-D119-07 Actuarial Equivalent Benefits○ R-D614-09: CSOP 3800, April 2009○ Forman and Scahill, "Issues for Implementing Phased Retirement in Defined Benefit Plans," <i>North American Actuarial Journal</i>, July 1, 2003 http://www.soa.org/library/journals/north-american-actuarial-journal/2003/july/naaj0307_6.pdf |

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| Exam |
| Instructional Objectives |
| 9. The candidate will be able to understand principles and rationale behind regulation. Material on U.S. and Canada |
| Learning Outcomes |
| The candidate will be able to: a) Describe the principles and motivations behind tax policy b) Describe the principles and motivations behind legislated restrictions c) Describe sources and framework of government regulation |
| Syllabus Resources |
| <ul style="list-style-type: none">o Morneau Sobeco, <i>Handbook of Canadian Pension & Benefit Plans</i>, 14th edition, 2008, Ch. 8 pp 177-183.o Turner, <i>Pension Policy: The Search for Better Solutions</i> 2009, Ch. 5 |

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| Instructional Objectives |
| 10. The candidate will be able to analyze the relationship of plan investments with plan design and valuations. |
| Learning Outcomes |
| In a given context, the candidate will be able to: a) Evaluate the interaction of plan investments and: <ul style="list-style-type: none">▪ Plan design,▪ Plan funding,▪ Valuation assumptions, and▪ Valuation methods. b) Solve for a measure of investment performance relevant to a given benchmark c) Given a context, describe and compare the structure of appropriate investment vehicles |
| Syllabus Resources |
| <ul style="list-style-type: none">○ Allen et al., <i>Retirement Plans: 401(k)s, IRAs, and Other Deferred Compensation Approaches</i>, 10th Edition, 2008, Ch. 24○ Morneau Sobeco, <i>Handbook of Canadian Pension & Benefit Plans</i>, 14th Edition, 2008, Ch. 6○ R-D120-07: Asset/Liability Modeling and Asset Allocation for Pension Plans (Wendt)○ R-D123-07: Maginn and Tuttle, <i>Managing Investment Portfolios</i>, Third Edition Chapter 12○ R-D124-07: Introduction and Overview of Retirement Plan Investments○ R-D129-09: How the Liability Benchmark is Developed and Used in Practice○ R-D131-09: Plan Sponsor Guide to Liability-Driven Investing Investment Strategies○ R-D132-09: Top 10 Myths About Liability-Driven Investing○ R-D133-09: Maginn and Tuttle, <i>Managing Investment Portfolios</i>, Third Edition, Chapter 8, Section 6 only |

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| Exam |
| Instructional Objectives |
| 11. The candidate will be able to apply standards of practice and the guides to professional conduct. |
| Learning Outcomes |
| In general or in a given context, the candidate will be able to: a) Explain and apply the Guides to Professional Conduct b) Explain and apply the relevant qualification standards c) Demonstrate knowledge of requirements regarding the actuary's responsibilities to the participants, plan sponsors, etc. d) Explain and apply all of the applicable standards of practice related to valuing retirement obligations. e) Recognize situations and actions that violate or compromise Standards or the Guides to Professional Conduct. f) Recommend a course of action to repair a violation of the Standards or the Guides to Professional Conduct. |
| Syllabus Resources |
| <ul style="list-style-type: none">o CIA Rules of Professional Conduct http://www.actuaries.ca/members/publications/2006/206091e.pdfo SOA Guides to Professional Conduct http://www.soa.org/about/membership/about-code-of-professional-conduct.aspxo CIA Qualification Standards http://www.actuaries.ca/membership/enrollment_e.cfmo SOA Qualification Standards http://www.soa.org/about/membership/about-req-admission.aspxo R-D125-09: ASOP #35 Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligationso R-D126-09: ASOP #27 Selection of Economic Assumptions for Measuring Pension Obligationso R-D127-09: ASOP #6 Measuring Retiree Group Benefit Obligationso R-D130-09: ASOP #23 Data Qualityo R-D134-09: ASOP #2 Recommendations for Actuarial Communicates Relating to Statements of Financial Accounting Standards Nos. 87 and 88o R-D135-09: ASOP#4 Measuring Pension Obligationso R-D613-09: CSOP 1000-1800, February 2009o R-D614-09: CSOP 3000-3800, April 2009 |

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