

Fall2005-ExamM(ActuarialModels) PDF转换可能丢失图片或格式，建议阅读原文

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Actuarial Models The examination for this material consists of four hours of multiple-choice questions. This material develops the candidate's knowledge of the theoretical basis of actuarial models and the application of those models to insurance and other financial risks. A thorough knowledge of calculus, probability and interest theory is assumed. Knowledge of risk management at the level of Exam P is also assumed. The candidate will be required to understand, in an actuarial context, what is meant by the word "model," how and why models are used, their advantages and their limitations. The candidate will be expected to understand what important results can be obtained from these models for the purpose of making business decisions, and what approaches can be used to determine these results. A variety of tables will be provided to the candidate in the study note package and at the examination. These include values for the standard normal distribution, illustrative life tables, and abridged inventories of discrete and continuous probability distributions. These tables are also available on the SOA Web site. Since they will be included with the examination, candidates will not be allowed to bring copies of the tables into the examination room. **LEARNING OUTCOMES** Survival and severity models. Define survival-time random variables for one life, both in the single- and multiple-decrement models. for two lives, where the

lives are independent or dependent (including the common shock model). Assuming a uniform distribution of deaths, define the continuous survival-time random variable that arises from the discrete survival-time random variable. Define severity random variables with or without a deductible. with or without a limit. with or without coinsurance. For any survival-time or severity random variable defined above, with single or mixed distributions, calculate expected values. variances. probabilities. percentiles. Define non-homogeneous and homogeneous discrete-time Markov Chain models and calculate the probabilities of

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