

# EDUCATION AND EXAMINATION COMMITTEE OF THE SOCIETY OF ACTUARIES (SOA)

## FALL 2008 EXAM MLC

### ACTUARIAL MODELS—LIFE CONTINGENCIES SEGMENT

#### INTRODUCTORY STUDY NOTE

1. The Actuarial Models—Life Contingencies Segment examination for Fall 2008 will be given on **Tuesday, November 4, from 8:30 a.m. to 11:30 a.m.** The examination will consist of 30 multiple-choice questions.

The score for the examination is based solely on the number of questions answered correctly. Therefore, candidates should answer every question to maximize their scores.

2. Any changes in the Course of Reading for this exam since the publication of the SOA *Fall 2008 Basic Education Catalog* will be posted on our Web site.
3. The following list contains all study notes for this exam in Fall 2008. Items marked with # are new/updated for this session.

MLC-11-08# Introductory Study Note (this study note)

Exam MLC Tables

Notational differences between *Actuarial Mathematics (AM)* and *Models for Quantifying Risk (MQR)* for candidates taking Exam MLC

Candidates using the First Edition of *Models for Quantifying Risk* will need to supplement the text with the Errata Package available on the Actex web site [www.actexmadriver.com](http://www.actexmadriver.com).

Past Exams All released exam papers, since 2000, can be found at:

<http://www.soa.org/education/resources/edu-multiple-choice-essay-examinations.aspx>

MLC-09-08 Exam MLC Sample Questions and Solutions

MLC-24-05 Multi-State Transition Models with Actuarial Applications (second printing with minor corrections, October 2007)

MLC-25-05# Section 8.5 from the second printing of *Actuarial Mathematics*, Second Edition, **Second Printing** (to be used with text Option A only)

MLC-28-08 Poisson Processes (and mixture distributions)

4. Errata:

*Actuarial Mathematics*, Second Edition

Page 87, the last line of problem 3.17b;  $(2k + 1)$  should be  $(2k - 1)$ .

MLC-24-05 (first printing) Page 15, the formula before “**Problems**” should be:

$$[(1)(0.2)](54)v + [(0.3)(0.3)](64)v^2 + [(0.08)(0.5)](74)v^3 + [(0.012)(1)]81v^4 = \mathbf{14.240}.$$

The combined actuarial present value for the two types of transitions together is  
 $17.426 + \mathbf{14.240} = \mathbf{31.486}$ .

MLC-25-05 (first printing)

In the second printing of the second edition of *Actuarial Mathematics* as well as in the first printing of Study Note MLC-25-05 there is an error in equation (8.5.15) on page 244. The error is corrected (by replacing  $n$  with  $h$ ) in the fifth printing of the book and the second printing of the Study Note.

5. The study notes for this exam include sample questions and solutions. The sample questions provide the candidate with the opportunity to practice on the types of questions that are likely to appear on the examination. New sample questions will be released periodically or whenever the nature of the examination changes substantially.
6. The Illustrative Life Table, the Illustrative Service Table, and a set of values from the standard normal distribution will be available for use on Exam M Actuarial Models–Life Contingencies Segment (Exam MLC). A copy of these is included with this note. Note that candidates will not be allowed to bring copies of the tables into the examination room.  
  
The Special Notes on the “Interest Functions” page of the tables include some general assumptions that apply to all problems unless otherwise stated.
7. A survey for examinations FM, MLC, MFE and C will be available on the SOA and CAS web sites after the examinations have been administered. Candidates are encouraged to provide feedback on the exam readings and the examinations that they have taken.
8. Several book distributors carry some or all of the textbooks for the Society of Actuaries exams. A list of distributors is available at: <http://www.soa.org/education/course-catalog/edu-catalog-detail.aspx>  
  
Any book distributor who carries books for SOA exams may have its information included on the SOA Web site unless the SOA office receives substantial complaints about service. Candidates should notify Basic Education Study Materials of the SOA in writing if they encounter serious problems with any distributor.
9. The examination questions for this exam will be based on the required readings for this exam. If a conflict exists (in definitions, terminology, etc.) between the readings for this exam and the readings for other exams, the questions should be answered on the basis of the readings for this exam.
10. Candidates may use the battery or solar-powered Texas Instruments BA-35 model calculator, the BA II Plus\*, the BA II Plus Professional\* or TI-30X or TI-30Xa or TI-30X II\* (IIS solar or IIB battery). Candidates may use more than one of the approved calculators during the examinations.

Calculator instructions may not be brought into the exam room. During the exam, the calculator must be removed from its carrying case so the supervisor can confirm it is an approved model. Candidates using a calculator other than the approved models will have their examinations disqualified.

Candidates can purchase calculators directly from: Texas Instruments, Attn: Order Entry, PO Box 650311, Mail Station 3962, Dallas, TX 75265, phone 800/842-2737 or <http://epsstore.ti.com>

*\*The memory of **TI-30X II**, **BA II Plus** and **BA II Plus Professional** will need to be cleared by the examination supervisor upon the candidate's entrance to the examination room.*

11. Information for various seminars/workshops and study manuals are listed at <http://www.soa.org/education/course-catalog/edu-catalog-detail.aspx> These seminars/workshops and study manuals do not reflect any official interpretation, opinion, or endorsement of the Society of Actuaries.
12. A candidate planning to seek admission to the SOA should submit the Application for Admission as Associate *before* completing the education requirements for Associateship as detailed in the SOA *Fall 2008 Basic Education Catalog*.
13. In addition to the examination requirements, all prospective SOA Associates will be required to attend and successfully complete a seminar on professionalism prior to admission as a member. See the SOA *Fall 2008 Basic Education Catalog* for more information.
14. The Society of Actuaries provides study notes to persons preparing for this examination. They are intended to acquaint candidates with some of the theoretical and practical considerations involved in the various subjects. While varying opinions are presented where appropriate, limits on the length of the material and other considerations sometimes prevent the inclusion of all possible opinions. These study notes do not, however, represent any official opinion, interpretation or endorsement of the Society of Actuaries. The SOA is grateful to the authors for their contributions in preparing study notes.

The American Academy of Actuaries (AAA) and the Conference of Consulting Actuaries (CCA) jointly sponsor the Associateship and Fellowship examinations with the SOA.