<u>Sample Problems for Exam MLC May 2007</u>

Almost all the material on Exam MLC in May 2007 was also on the Exam M syllabus during 2005-6. Some material on the 2005-6 Exam M syllabus has been moved to Exam C. This list identifies which existing problems remain relevant to Exam MLC.

In addition to the problems listed here, there are three additional sets. All problems in them still apply:
1. Additional Exam M Sample Questions and Solutions. These are Markov problems, based on the Daniel study note.
2. Exam M Additional Sample Questions. These are problems based on Chapter 15 of <u>Actuarial Mathematics</u>, including expenses, expense reserves and asset shares, or on the corresponding sections of <u>Models for Quantifying Risks</u>.
3. Exam MLC Additional Sample Questions. This is a small set of additional questions, to be available by the end of February 2007, covering the hyperbolic mortality assumption and simple contingent functions (<u>Actuarial Mathematics</u>, section 3.6 and section 9.9, or corresponding sections in <u>Models for Quantifying Risks</u>).

Except for the November 2006 Exam questions, all these questions came from exams where <u>Actuarial Mathematics</u> was the only life contingencies text. There may be some instances where notation would differ from Models for Quantifying Risk. There is a separate study note on Notation Differences, including how they will be handled on future exams.

1. Still on MLC
2. Still on MLC
3. Still on MLC
4. Still on MLC
5. Still on MLC
6, Moved to Exam C
7. Moved to Exam C
8. Still on MLC
9. Still on MLC
10. Still on MLC
11. Still on MLC
12. Still on MLC
13. Still on MLC
14. Still on MLC
15. Still on MLC
16. Still on MLC
17. Still on MLC
18. Still on MLC
19. Still on MLC
20. Moved to Exam C
21. Moved to Exam C
22. Moved to Exam C
23. Still on MLC
24. Still on MLC
25. Still on MLC
26. Still on MLC
27. Still on MLC
28. Still on MLC
29. Moved to Exam C
30. Moved to Exam C
31. Moved to Exam C
32. Moved to Exam C
33. Still on MLC
34. Still on MLC
35. Still on MLC
36. Still on MLC
37. Still on MLC (Note: the first sentence should specify a special 3-year temporary life annuity-due. Also, even though not explicitly stated you should assume that all lives follow the same mortality table.)
38. Still on MLC
39. Moved to Exam C
40. Moved to Exam C

November 2005 Exam M

1. Still on MLC
2. Still on MLC
3. Still on MLC
4. Still on MLC
5. Still on MLC (Note: The subscripting of the matrices does not correspond to the syllabus. In the problem Q_j is the transition matrix for year j, from time j-1 to time j. The syllabus notation for that transition matrix is Q_{j-1}. MLC exams will use the syllabus notation.)
6, Still on MLC
7. Still on MLC
8. Still on MLC
9. Still on MLC
10. Still on MLC
11. Still on MLC
12. Still on MLC
13. Still on MLC
14. Still on MLC (Note: the symbol "^" is not on the MLC syllabus, and will not be used in a problem unless defined there. It is mathematical notation not unique to actuaries, and means "the minimum of".)
15. Still on MLC
16. Still on MLC
17. Moved to Exam C
18. Moved to Exam C
19. Moved to Exam C
20. Still on MLC
21. Still on MLC
22. Still on MLC
23. Still on MLC
24. Still on MLC
25. Still on MLC
26. Moved to Exam C
27. Moved to Exam C
28. Moved to Exam C
29. Still on MLC
30. Still on MLC
31. Still on MLC
32. Still on MLC
33. Still on MLC
34. Moved to Exam C
35. Moved to Exam C
36. Still on MLC
37. Still on MLC
38. Moved to Exam C
39. Moved to Exam C
40. Still on MLC

<u>May 2005 Exam M</u>
1. Still on MLC
2. Still on MLC
3. Still on MLC
4. Still on MLC
5. Still on MLC
6, Still on MLC
7. Still on MLC
8. Still on MLC
9. Moved to Exam C
10. Moved to Exam C
11. Still on MLC
12. Still on MLC
13. Still on MLC
14. Still on MLC
15. Still on MLC
16. Still on MLC (Note: Please add additional given information "The asset share at time 0 is 0.")
17. Moved to Exam C
18. Moved to Exam C
19. Moved to Exam C
20. Still on MLC
21. Still on MLC
22. Still on MLC
23. Still on MLC
24. Still on MLC
25. Still on MLC
26. Still on MLC
27. Still on MLC
28. Still on MLC
29. Still on MLC
30. Still on MLC
31. Moved to Exam C
32. Moved to Exam C
33. Still on MLC
34. Moved to Exam C
35. Still on MLC
36. Still on MLC
37. Still on MLC
38. Still on MLC
39. Moved to Exam C
40. Moved to Exam C

November 2004 Exam M

1. Still on MLC
2. Still on MLC
3. Still on MLC
4. Still on MLC
5. Moved to Exam C
6, Moved to Exam C
7. Moved to Exam C
8. Moved to Exam C
9. Still on MLC
10. Still on MLC
11. Still on MLC
12. Still on MLC
13. Deleted from Preliminary Exams
14. Still on MLC
15. Moved to Exam C
16. Still on MLC
17. Moved to Exam C
18. Moved to Exam C
19. Moved to Exam C
20. Still on MLC
21. Still on MLC
22. Still on MLC
23. Still on MLC
24. Deleted from preliminary exams
25. Moved to Exam C
26. Still on MLC
27. Deleted from preliminary exams
28. Still on MLC
29. Still on MLC
30. Still on MLC
31. Still on MLC
32. Moved to Exam C
33. Moved to Exam C
34. Moved to Exam C
35. Still on MLC
36. Still on MLC
37. Still on MLC
38. Still on MLC
39. Still on MLC
40. Still on MLC

Exam M Sample Questions (currently on the M Study Note section)

1. Still on MLC
2. Still on MLC
3. Moved to Exam C
4. Moved to Exam C
5. Still on MLC
6, Still on MLC
7. Still on MLC
8. Still on MLC
9. Still on MLC
10. Still on MLC
11. Still on MLC
12. Still on MLC (Note: the term "spliced" is not on the MLC syllabus, but it is not essential to the problem. There is only one way that the given function will be a density function.)
13. Still on MLC
14. Moved to Exam C
15. Still on MLC
16. Still on MLC
17. Still on MLC
18. Still on MLC
19. Still on MLC
20. Still on MLC
21. Still on MLC (Note: the symbol "^" is not on the MLC syllabus, and will not be used in a problem unless defined there. It is mathematical notation not unique to actuaries, and means "the minimum of".)
22. Moved to Exam C
23. Still on MLC
24. Still on MLC
25. Still on MLC
26. Moved to Exam C
27. Moved to Exam C
28. Still on MLC (Note: as with question 21, the symbol "^" is not on the MLC syllabus)
29. Still on MLC
30. Still on MLC
31. Still on MLC
32. Still on MLC
33. Still on MLC
34. Still on MLC
35. Still on MLC
36. Moved to Exam C
37. Moved to Exam C
38. Deleted from preliminary exams
39. Still on MLC
40. Still on MLC

41. Still on MLC
42. Still on MLC
43. Still on MLC
44. Still on MLC
45. Moved to Exam C
46. Still on MLC
47. Still on MLC
48. Still on MLC
49. Still on MLC
50. Still on MLC
51. Still on MLC
52. Moved to Exam C
53. Moved to Exam C
54. Still on MLC
55. Still on MLC
56. Still on MLC
57. Still on MLC
58. Still on MLC
59. Still on MLC
60. Moved to Exam C
61. Moved to Exam C
62. Still on MLC
63. Still on MLC
64. Still on MLC
65. Still on MLC
66. Still on MLC
67. Still on MLC
68. Still on MLC
69. Still on MLC
70. Moved to Exam C
71. Moved to Exam C
72. Still on MLC
73. Still on MLC
74. Still on MLC
75. Still on MLC
76. Still on MLC
77. Still on MLC
78. Still on MLC
79. Still on MLC
80. Moved to Exam C
81. Still on MLC
82. Still on MLC
83. Still on MLC
84. Still on MLC
85. Still on MLC
86. Still on MLC

87. Still on MLC (Note: tables for M included properties of the gamma distribution. Tables for MLC do not. If this question were asked on MLC, the density of the gamma distribution would be given.)
88. Moved to Exam C
89. Still on MLC
90. Still on MLC
91. Still on MLC
92. Still on MLC
93. Moved to Exam C
94. Moved to Exam C
95. Moved to Exam C
96. Still on MLC
97. Still on MLC
98. Still on MLC
99. Still on MLC
100. Moved to Exam C
101. Still on MLC
102. Still on MLC
103. Still on MLC
104. Still on MLC
105. Still on MLC
106. Still on MLC
107. Moved to Exam C
108. Moved to Exam C
109. Still on MLC
110. Still on MLC
111. Moved to Exam C
112. Still on MLC
113. Still on MLC
114. Moved to Exam C
115. Moved to Exam C
116. Still on MLC
117. Moved to Exam C
118. Still on MLC
119. Still on MLC
120. Still on MLC
121. Still on MLC
122. Still on MLC
123. Moved to Exam C
124. Still on MLC
125. Still on MLC
126. Still on MLC
127. Still on MLC
128. Still on MLC
129. Moved to Exam C
130. Still on MLC
131. Still on MLC
132. Still on MLC

133. Still on MLC
134. Moved to Exam C
135. Still on MLC
136. Still on MLC
137. Moved to Exam C
138. Still on MLC
139. Still on MLC
140. Still on MLC
141. Moved to Exam C
142. Still on MLC
143. Still on MLC
144. Still on MLC
145. Still on MLC
146. Still on MLC
147. Moved to Exam C
148. Still on MLC
149. Still on MLC
150. Still on MLC
151. Moved to Exam C
152. Moved to Exam C
153. Still on MLC
154. Still on MLC
155. Still on MLC
156. Moved to Exam C
157. Moved to Exam C