May, 2012

SPECIALIZED DIPLOMA EXAMINATION
(CASUALTY ACTUARIAL SCIENCE - NON-LIFE)
ESTIMATING UNPAID CLAIMS USING BASIC TECHNIQUES

Time : 3 Hours

[ Total Marks : 100 ]

Answer EIGHT questions only. Question number TEN carries 16 marks but this is not compulsory. All other questions carry 12 marks each.

Q.1 Answer Any Three of the following:
   a) Define Claim Reserve. What are its Five Components?
   b) Explain Long-Tail and Short-Tail Line of Business.
   c) Write a Short Note on:
       i) Crime Insurance        ii) Collision
   d) What is Calendar Year Aggregation of the Claim Data. Explain and discuss major advantages and disadvantages of this method.

Q.2 Answer Any Three:
   a) State any four ways of verifying claims data available.
   b) What are the elements comprising the total unpaid claim estimate?
   c) What are the key assumptions of Bornhuetter Ferguson Method?
   d) State the common uses of Cape Cod technique.

Q.3 Answer Any Three of the following:
   a) Discuss the difficulties faced by the Actuary in estimating unpaid A.L.A.E.
   b) Define Ultimate Claim and its three components.
   c) State key assumptions of the Development Method.
   d) While analysing unpaid claims, state the type of exposure that can be used for following Lines of Insurance:
       i) Workers’ Compensation        iii) Professional Liability
       ii) Property                    iv) Crime

Q.4 Discuss Any Two of the following :
   a) When separating data into groups, for an unpaid claims analysis, list the key characteristics on which the Actuaries focus on.
   b) Mechanics of Expected Claims Technique.
   c) The three ways of treating A.L.A.E. in excess of Loss Re-Insurance contracts.
Q.5 Answer Any Two of the following:
   a) What are the common uses of Expected Claims Method? 
      List any two difficulties faced while using this Method.
   b) Describe Mechanics of Bornhuetter Ferguson Method.
   c) State Key Assumptions of:
      i) Expected Claims Method.  ii) Cape Cod Method.

Q.6 Explain, with examples, Any Two of the following:
   a) Recoveries.
   b) Multiple Currencies Claims.
   c) Claim-Related Expenses.

Q.7 Explain the Frequency-Severity Technique for projecting Unpaid Claims using 
   Approach Number-2: Incorporation of Exposures and Inflation into the Methodology.

Q.8 Explain 7 basic steps of the Development Method.
   Describe situations where this method is not suitable.

Q.9 Describe the characteristics for which the Actuaries review the claim development 
   experience, when selecting the claim development factors.

Q.10 Given are the Reported claims of a General Insurance Company:

<table>
<thead>
<tr>
<th>Accident Year</th>
<th>Reported Claims as of (Months)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12</td>
</tr>
<tr>
<td>2001</td>
<td>1,539</td>
</tr>
<tr>
<td>2002</td>
<td>2,318</td>
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<tr>
<td>2003</td>
<td>1,743</td>
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<tr>
<td>2004</td>
<td>2,221</td>
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<tr>
<td>2005</td>
<td>3,043</td>
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<tr>
<td>2006</td>
<td>3,531</td>
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<tr>
<td>2007</td>
<td>3,529</td>
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<tr>
<td>2008</td>
<td>3,409</td>
</tr>
</tbody>
</table>

i) Calculate Arithmetic, Medial, Volume-Weighted and Geometric Average 
   Age-to-Age Factors.

ii) Develop Selected Age-to-Age Factor by using Development Method.

END