16. (2.25 points)

Given the following as of December 31, 2015:

Accident Year	Cumulative Paid Claims	Paid Development Technique Ultimate Claims	Paid Development Technique Age-to-Ultimate Factor
2012	$600	$720	Not Provided
2013	$500	$625	Not Provided
2014	Not Provided	Not Provided	2.00
2015	$150	Not Provided	3.75

- Accident year 2015 reported claims = $350.
- Expected claim ratio = 65.0%.
- Calendar year 2015 earned premium = $700.

a. (0.75 point)

Calculate the following for accident year 2015:

i. Case outstanding
ii. IBNR using the expected claims technique
iii. Total unpaid claim estimate using the expected claims technique

b. (1 point)

Upon review, the 36-48 age-to-age claims development factor was corrected to be 1.4. Calculate the revised accident year 2015 ultimate claims using the correct factor and the paid development technique.

c. (0.5 point)

Calculate the accident year 2015 ultimate claims using the paid Bornhuetter-Ferguson technique and the corrected age-to-age claims development factor in part b. above.

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EXAM 5 SPRING 2016 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 16

TOTAL POINT VALUE: 2.25 | **LEARNING OBJECTIVE(S): B3**

SAMPLE ANSWERS

Part a: 0.75 point

Case Outstanding = reported – paid = 350 – 150 = 200
IBNR Using the Expected Claims Technique = Ultimate – Reported = 700*.65 – 350 = 105
Total Unpaid Claim Estimate using the Expected Claims Technique = Ultimate – Paid = 700*.65 – 305 = 305 or = case outstanding + IBNR = 200 + 105 = 305

Part b: 1 point

AY	Cumulative Paid	Ult Paid Technique	CDF	Implied LDF	New CDF
12	600	720	1.2 = 720/600	1.2	1.2
13	500	625	1.25 = 625/500	1.0417 (corrected)	1.68
14			2.0	1.6	2.688
15	150	563 = 150*3.75	3.75	1.875	5.04

Ultimate claims
AY 2015 = 5.04 * 150 = 756

Part c: 0.5 point

AY 2015 ultimate losses = .65*700*(1-1/5.04) {expected unpaid claims} + 150 {paid losses} = 514.72

EXAMINER'S REPORT

Candidates were expected to understand various methods of estimating ultimate losses and understand the derivation of age-age and age-ultimate factors.

This question was relatively straightforward, focusing on two basic reserving techniques, and candidates performed very well on this question.

Part a

Candidates were expected to know the definition of case outstanding, IBNR and unpaid as well as the expected claims technique. Candidates were expected to calculate the three numbers (case outstanding, IBNR and unpaid).

Common errors were related to incorrect application of the expected claims technique.

Part b

Candidates were expected to understand the calculation of development factors, both age-to-age and age-to-ultimate. Candidates were expected to calculate various development factors and subsequently calculate a revised ultimate loss using a corrected age-to-age factor.

Common mistakes included:

- Replacing a different age-to-age factor than the 36-to-48 month factor
- Substituting the 1.4 as an age-to-ultimate factor, instead of an age-to-age factor.

Part c

Candidates were expected to calculate ultimate losses using the paid B-F technique and the LDF calculated in part b.

Common mistakes included:

- Using the reported loss instead of the paid loss