21. (2 points)

An actuary is estimating the IBNR for a company using the data below, as of December 31, 2015.

Accident Year	Reported Claims ($000)	On-Level Earned Premium ($000)	Reported Development Technique Ultimate Claims Estimate ($000)
2012	1,275	2,400	1,339
2013	1,152	2,300	1,355
2014	932	2,200	1,370
2015	604	2,100	1,332

- The actuary estimates the expected claims ratio to be 60% for all years.
- There is no loss trend.

a. (0.75 point)

Estimate the accident year 2015 IBNR using the Bornhuetter-Ferguson technique.

b. (0.75 point)

Fully assess the reasonableness of the 60% expected claims ratio assumption.

c. (0.5 point)

Recommend and briefly justify a technique that would be more appropriate than the Bornhuetter-Ferguson for this data set.

QUESTION 21	
TOTAL POINT VALUE: 2	**LEARNING OBJECTIVE: B3, B5**
SAMPLE ANSWERS	

Part a: 0.75 point

2015 % Unreported = (1332 - 604) / 1332 = 0.5465

2015 IBNR = 0.5465 × 0.6 × 2100 = 688.65

Part b: 0.75 point

AY	Claims Ratio
2012	0.558
2013	0.5891
2014	0.6227
2015	0.6343

The claims ratio appears to be steadily increasing and a 60% selection is understated for both 2014 and 2015. I do not think it is a reasonable selection since the BF technique assumes the claims ratio is constant.

Part c: 0.5 point

Sample Answer 1
The Cape Cod technique will use a claims ratio that is calculated from experience data. It will be more responsive to the deteriorating claims ratio.

Sample Answer 2
Since the ECR looks to be deteriorating, the BF method would not be responsive enough. I would recommend the reported development method since it will accurately respond to changes in the ECR

EXAMINER'S REPORT

Part a

Candidates were expected to calculate IBNR by calculating a percent unreported by constructing development patterns and then multiplying the given expected claims ratio by the premium.

Common mistakes included:
- Simply subtracting the 2015 reported development technique ultimate by the reported, in effect, the reported development IBNR
- Subtracting the expected claims from 2015 (OLEP multiplied by the ECR) and then subtracting the reported, in effect, the expected claims IBNR
- Multiplying by the percent reported, not the percent unreported
- Confusing the BF Ultimate with the IBNR

Part b
Candidates were expected to list out the claims ratios for the 4 accident years, note an upward trend, and opine that the upward trend in claim ratio invalidated the 60% ECR. Common mistakes included: • Excessive hedging or second-guessing as to the opinion, or not stating a clear answer • Some candidates stated, without support, that the increasing claims ratio was random fluctuation • Neglecting to state any opinion • Neglecting to note trend

Part c
Candidates were expected to argue for either the Cape Cod method or the Reported Development method (the Paid Development method was also accepted). Candidates were expected to provide justification including, but not limited to: • The selected method is more responsive to the updated data • The BF method uses an early initial estimate which doesn't use updated data, unlike the selected method • The selected method can incorporate the higher loss ratios Partial credit was awarded when an appropriate technique was listed, although not supported with a valid justification. Common mistakes included: • Discussing an irrelevant method or a method which does not directly address the issue of increasing claims ratios. • The Berquist-Sherman method, while an extension of the Reported Development method, was not awarded credit. Berquist-Sherman accounts for changes/trends in settlement patterns while this question deals with trends in loss ratios.