14. (3 points)

The balanced plan provisions for a workers' compensation risk in the state of Alabama are given below:

Standard Premium	$9,000,000
Minimum Entry Ratio, r_H	0.28
Maximum Entry Ratio, r_G	2.55
Loss Conversion Factor	1.30
Tax Multiplier	1.05
State Hazard Group Differential	0.90
Adjusted Expected Loss	$4,860,000

- Using the 2008 NCCI table of expected loss ranges, the expected retrospective premium = $9,493,205.
- There is no per-occurrence loss limit.

a. (1.25 points)

Calculate the basic premium ratio to standard premium.

b. (1.25 points)

The insured believes that the insurance charge embedded in the current basic premium is unfair and cites the following five years of loss experience the insured had with a prior carrier:

Year	Loss Ratio
1	40%
2	165%
3	15%
4	55%
5	25%

The insured's exposure base has remained stable over time.

Compare the net insurance charge in the current basic premium for this policy to the net insurance charge based on the prior loss experience using the plan provisions given above.

c. (0.5 point)

Discuss the appropriateness of using a basic premium derived from the prior loss experience.

QUESTION 14	
TOTAL POINT VALUE: 3	**LEARNING OBJECTIVE(S): B5**
SAMPLE ANSWERS	

Part a: 1.25 points

Sample 1
$R = [B + c(E − I)] \times T$
$E = 4{,}860{,}000 / 0.9 = 5{,}400{,}000$
Charge $(R_g) = 0.0379$ (lku from table)
Charge $(R_h) = 0.7253$ (lku from table)
Savings $(R_h) = 0.0053$
$I = (\text{Charge} − \text{Savings}) \times E = (0.0379 − 0.0053) \times 5{,}400{,}000 = 176{,}040$
$B = 2{,}250{,}000$
$B/SP = 2{,}250{,}000 / 9{,}000{,}000 = 25\%$

Sample 2
$B/SP = e/SP − (c-1) \times E / SP + cI/SP$
$GCP = 9{,}493{,}205 = (e + E) \times T$
$e = 3{,}641{,}148$
Charge $(R_g) = 0.0379$ (lku from table)
Charge $(R_h) = 0.7253$ (lku from table)
Savings $(R_h) = 0.0053$
$I = (\text{Charge} − \text{Savings}) \times E = (0.0379 − 0.0053) \times 5{,}400{,}000 = 176{,}040$
$B/SP = 2{,}250{,}000 / 9{,}000{,}000 = 25\%$

Part b: 1.25 points

Sample 1
I(current) = 176,040 from part a
Charge$(R_g) = (1.65 − 1.55)/(5 \times 0.6) = 0.04$
Savings$(R_h) = (0.168 − 0.15)/(5 \times 0.6) = 0.006$
I (experience) $= 0.6 \times (9{,}000{,}000) \times (0.04 − 0.006) = 183{,}600$
The net insurance charge from a is lower than calculated from the prior experience

Sample 2
I(current) = 176,040 / 9,000,000 = 0.0196 from part a
Charge$(R_g) = (1.65 − 1.55)/(5 \times 0.6) = 0.04$
Savings$(R_h) = (0.168 − 0.15)/(5 \times 0.6) = 0.006$
I (experience) $= 0.6 \times (0.04 − 0.006) = 0.0204$
The net insurance charges are fairly comparable

Sample 3
I(current) = 0.0326 from part a
Charge(2.55) $= (2.75 − 2.55)/(5) = 0.04$
Savings(0.28) $= (0.28 − 0.25)/(5) = 0.006$
I (experience) $= 0.04 − 0.006 = 0.034$
The insurance charge is slightly higher using the experience

Part c: 0.5 point

Sample 1

Basic premium should not be derived using prior loss experience because prior carrier could have had completely different expense loads.

Sample 2

If the max or min entry ratios have changed, it is not appropriate to use the prior carrier experience to calculate basic premium.

Sample 3

Not appropriate because it's only 5 years of data, which is not very credible.

Sample 4

In this case I don't think it is appropriate. There is not enough data and the loss ratios are very volatile.

Sample 5

The prior carrier could have a different mix of business than the current carrier so aggregate distributions may not be the same.

EXAMINER'S REPORT

Candidates were expected to be able to calculate a basic premium and insurance charges using values looked up in the NCCI Retrospective Rating manual as well as using the prior loss experience. They were also expected to opine on whether it is appropriate to use prior loss experience in determining basic premium.

Part a

Candidates were expected to calculate basic premium as a percentage of standard premium using the given information and the NCCI Retrospective Rating manual. Some candidates calculated the expense ratio to determine the basic premium as shown in Sample Response 2, which was a valid response but not necessary for full credit.

Common mistakes included:
- Not calculating the insurance charge
- Not subtracting the insurance charge from the total expected loss
- Not using the Adjusted Expected Loss to determine the correct charge and savings from the NCCI Retrospective Rating manual and instead deriving some other expected loss
- Not dividing the final calculated basic premium by the standard premium
- Using the expense ratio from the NCCI Retrospective Rating manual and not deriving the expense ratio from the given information (if using the method in Sample 2)

Part b

Candidates were expected to calculate the net insurance charge based on the insured's prior loss experience and compare to the net insurance charge from part a. Candidates received credit whether this comparison was done comparing the net insurance charge as a dollar amount, as a %

of Standard Premium, or as a % or Expected Loss. Some candidates constructed a Table M or Lee diagram to determine the insurance charge and savings from the prior loss experience, which was an unnecessarily complicated but valid approach.

- The most common mistake was making the comparison on a different basis (i.e. % Expected Loss vs % Standard Premium).

Part c

Candidates were expected to discuss the appropriateness of using an insured's prior loss experience from another carrier to derive a basic premium charge.

Common mistakes included:
- Not stating a position on the appropriateness
- Not supporting the given position