

17. (1.75 points)

Given the following NAIC risk charges for an insurance company:

R <sub>0</sub> :	10,000,000
R <sub>1</sub> :	4,000,000
R <sub>2</sub> :	5,000,000
R <sub>3</sub> :	2,000,000
R <sub>4</sub> :	15,000,000
R <sub>5</sub> :	20,000,000

And the following information for the insurance company:

Policyholders' surplus:	20,000,000
Tabular discount on medical reserves:	3,000,000
Non-tabular discount:	2,000,000

a. (1 point)

Calculate the Risk-Based Capital (RBC) ratio.

b. (0.25 point)

Identify the RBC action level (if any).

c. (0.5 point)

Briefly describe the resulting actions of both the regulator and the company under the RBC Model Act.

**SAMPLE ANSWERS AND EXAMINER'S REPORT**

<b>QUESTION 17</b>	
<b>TOTAL POINT VALUE: 1.75</b>	<b>LEARNING OBJECTIVE: C2</b>
<b>SAMPLE ANSWERS</b>	
<b>Part a: 1 point</b>	
<p><u>Sample 1</u></p> <p>RBC = <math>10 + \text{SQRT}(16+25+4+225+400) = \\$35.88\text{M}</math></p> <p>Authorized Control Level = <math>\\$35.88\text{M} \times 0.5 = \\$17.942\text{M}</math></p> <p>Adjusted Capital = PHS – NonTabular Discount – Tabular Medical Discount = <math>20-3-2=\\$15\text{M}</math></p> <p>RBC Ratio = Adjusted Capital / ACL = <math>15.0 / 17.942 = 0.836</math></p> <p><u>Sample 2</u></p> <p>RBC = <math>10 + \text{SQRT}(16+25+4+225+400) = \\$35.88\text{M}</math></p> <p>Authorized Control Level = <math>\\$35.88\text{M} \times 0.5 = \\$17.942\text{M}</math></p> <p>Assume there is no such thing as Tabular Medical Discount</p> <p>Adjusted Capital = PHS – NonTabular Discount = <math>20-2=\\$18\text{M}</math></p> <p>RBC Ratio = Adjusted Capital / ACL = <math>18.0 / 17.942 = 1.003</math></p>	
<b>Part b: 0.25 point</b>	
<p>Part b was graded using the result calculated in part a. Full credit was awarded when the correct action level was identified for the RBC ratio calculated in a.</p> <p>If <math>a &gt; 2</math>, then no action</p> <p>If <math>1.5 &lt; a &lt; 2</math>, then company action level</p> <p>If <math>1 &lt; a &lt; 1.5</math>, then regulatory action level</p> <p>If <math>0.7 &lt; a &lt; 1</math>, then authorized control level</p> <p>If <math>a &lt; 0.7</math> mandatory control level</p>	
<b>Part c: 0.5 point</b>	
<p>Part c was graded based on the action level identified in part b:</p> <p>If part b identified company action level</p> <ul style="list-style-type: none"> <li>• The company must submit an action plan on how to improve the capital position or reduce risks; the regulator has no required actions</li> </ul> <p>If part b identified regulatory action level:</p> <ul style="list-style-type: none"> <li>• The company must submit an action plan on how to improve the capital position or reduce risks; the regulator has the authority to take corrective actions such as restricting new business, but it is not required.</li> </ul> <p>If part b identified authorized control level:</p> <ul style="list-style-type: none"> <li>• The company has no actions; the regulator has the authority to take control of the</li> </ul>	

## SAMPLE ANSWERS AND EXAMINER'S REPORT

company, but it is not required.

If part b identified mandatory control level:

- The company has no actions; the regulator must take control of the company to prepare for liquidation

### EXAMINER'S REPORT

The candidates were expected to calculate the RBC ratio and describe the resulting regulator and company actions. This topic is frequently covered on prior exams, with a sample question directly out of the text. Formulas were directly pulled from the paper; table of levels action required was also in paper.

#### Part a

The candidates were expected to calculate RBC, Authorized Control Level, Adjusted Capital, and RBC Ratio. Examples of each calculation are provided directly in the syllabus material. The discounting of the surplus was more difficult, especially the handling of tabular medical discount. Full credit was given for two versions of discounted surplus.

Common mistakes included:

- Failure to discount properly
- Moving  $\frac{1}{2}$  of R3 to R4 unnecessarily
- Inverse the ratio
- Not remembering to multiply  $\frac{1}{2}$  to the RBC

#### Part b

The candidates were expected to name the action level.

Common mistakes included:

- Not using the right word 'action vs control' in the description of the level
- Not recalling the correct level

#### Part c

The candidates were expected to name the correct action from regulator and company from the action level:

Common mistakes included:

- Confusing regulatory action vs authorized control actions
- Not being precise in the use of 'regulator has authority to take control' vs 'regulator must take control'