16. (2.5 points)

a. (1 point)

Identify and briefly describe two major risk categories measured by the Risk-Based Capital (RBC) formula.

b. (0.5 point)

Describe the purpose of RBC from the perspective of the regulator.

c. (1 point)

Briefly describe two arguments in favor of and two arguments against using the RBC formula to calculate a universal target capital level.

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SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 16	
TOTAL POINT VALUE: 2.5	**LEARNING OBJECTIVE: A2, C2**
SAMPLE ANSWERS	
Part a: 1 point	

Any two of the following:

Risk Categories and Descriptions – Life RBC formula

- C1 – Asset Risk: represents risks associated with an insurance company's investments and other recoverable-based assets. It considers the risk that a bond issuer will not make the required interest or principal repayments (default risk) or that the value of the asset will be substantially impaired due to changes in interest rates or financial market conditions.
- C2 – Insurance/Underwriting Risk: represents the risk associated with the issuance of insurance policies. It is analogous to underwriting risk in the P&C industry. It represents the risk that claims emerge greater than expected due to inadequate pricing or random variation.
- C3 – Interest Rate Risk: represents the risk that interest rates will change and result in a mismatch between assets and liabilities.
- C4 – Business Risk: intended to capture other risks inherent in an insurance company's operations. For life insurance companies, the business risk charge within RBC considers the risk of financial loss from litigation and guarantee fund assessments. Both impact a life insurance company's expenses.

Risk Categories and Descriptions – P&C RBC formula

- R0 – Asset Risk – Subsidiary insurance companies: considers default risk associated with investments in affiliated insurance companies.
- R1 – Asset Risk – Fixed income: considers changes in interest rates and potential default of fixed income investments.
- R2 – Asset Risk – Equity: considers changes in asset valuations for non-fixed income investments (stocks, real estate).
- R3 – Asset Risk – Credit: credit risk associated with receivables on the balance sheet as well as risk associated with reinsurance recoverables. Contemplates risk that the counterparty will default and the risk associated with estimating the amounts recorded for counterparty recoverables.
- R4 – Underwriting Risk – Reserves: concerned with past business, risk that the company's recorded loss and LAE reserves will develop adversely
- R5 – Underwriting Risk – New written premium: future business, risk that one year's worth of the company's future business will be unprofitable/risk that the premiums will not be able to cover losses

Part b: 0.5 point

Any two of the following:

- The purpose of RBC is to help regulators identify insurers that are in financial trouble and that need regulatory attention/early warning sign

- Therefore, the RBC requirements attempt to individualize minimum capital requirements for each insurer.
- RBC allows or mandates a regulator to take action when a company reaches a certain RBC action level.

Part c: 1 point

Any two of the following

- Simple to apply and understand
- Responsive to actual history and underlying risk
- Easily reproducible by future practitioners
- Statistically relevant
- Resulting in indications that could be adopted without disruptive swings in required capital for regulated companies
- RBC is already in use
- Regulators can take corrective action
- Uniform/able to compare across companies
- Objective
- Difficult to manipulate
- Charges higher amounts for riskier investments

Any two of the following:

- The NAIC has indicated that a universal target capital level and/or specified time horizon across all business is not feasible.
- The NAIC believes these target levels should be different for type/line of business due to inherently different risks.
- The NAIC believes these target levels should be different for type/line of business due to credibility issues around developing distributions that make the validation of safety levels difficult.
- Doesn't capture all types of risk for example catastrophe risk
- Doesn't take into account management decisions/business plans & strategy/internal controls
- Doesn't take into account rate adequacy/reserve adequacy
- Not a complex model/doesn't use stochastic modeling/uses arbitrary factors/not actuarially justified factors
- Difficult to compare to foreign insurers/those that do not use RBC
- Gives insurers a false sense of security
- RBC is a minimal capital level, does not assume a worst case scenario
- Promotes the understating of reserves

EXAMINER'S REPORT

The candidates were expected to know the risk categories of Risk Based Capital (RBC), purposes of RBC, and advantages and disadvantages of using RBC. This question combined learning objectives A2 and C2.

SAMPLE ANSWERS AND EXAMINER'S REPORT

Part a
The candidates were expected to know two major risks categories measured by the RBC formula. Note that the question did not specify the life or property/casualty calculation so all answers were accepted that referred to either/or. Common mistakes included: • Including investment risk as one of the risk categories • Not briefly describing the risk categories and instead just including the components of Asset Risk or Underwriting Risk • Stating the Reserve Risk measured adequacy of reserves
Part b
The candidates were expected to know the purpose of RBC from the <u>perspective of the regulator</u>. Common mistakes included: • Not responding from the regulator's perspective • Giving the definition of RBC • Providing only one response
Part c
The candidates were expected to give two arguments in favor and two arguments against using the RBC formula to calculate a universal target capital level. Common mistakes included: • Not being specific in their responses such as "RBC uses factors that may not be good for certain insurers" or "RBC is formulaic and does not account for all risk" • Stating that interest rate risk is not included in RBC as an argument against, but this is included in the RBC calculation. • Stating that RBC was easily manipulated and complex but it is a simple calculation and not easy to manipulate.