

EXAM 6 – CANADA, FALL 2019

16. (1.75 points)

The following scenarios with and without a catastrophic event are projected for a federally regulated property and casualty insurance company as at December 31, 2018 on a gross of reinsurance basis. All amounts are in thousands of dollars (\$000s).

Below are the expected financial statements figures with and without a catastrophic event:

	Without catastrophic event	With catastrophic event
Bonds	750,000	700,000
Cash	150,000	100,000
Gross earned premium	450,000	450,000
Gross incurred losses	325,000	525,000
Expenses	100,000	100,000

The insurer is considering purchasing a catastrophe reinsurance treaty with the following features:

- The treaty costs 5% of gross earned premium and is paid in full at inception.
- The treaty pays for losses from a single event in excess of 20% up to a maximum of 100% of gross earned premium.
- The treaty has a mandatory reinstatement premium provision, with the reinstatement premium due once the treaty attachment is reached on a paid basis.
- The reinstatement premium charge is 2% of gross premium.

The investment yield on bonds and cash is 5%.

Calculate the insurer's total income if the insurer purchases the reinsurance treaty and a catastrophe occurs. Assume there are no other events that would trigger payment on the reinsurance treaty.

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SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION 16	
TOTAL POINT VALUE: 1.75	LEARNING OBJECTIVE(S): C1
SAMPLE ANSWERS	
<p><u>Sample</u></p> <p>Total income = U/W income + Inv. Income</p> <p>U/W income = NEP – Net loss – expenses</p> <p>NEP = GEP – ceded EP = 450,000 – (.05 + .02) 450,000 = 418,500</p> <p>Net losses = 525,000 – min(450,000, 200,000 – 450,000(.2)) = 525,000 – 110,000 = 415,000</p> <p>Expenses = 100,000</p> <p>Inv Income = (700,000 + 100,000 – (.05 + .02)(450,000)) (.05) = 38,425</p> <p>Total Income = 418,500 – 415,000 – 100,000 + 38,425 = -58,075</p>	
EXAMINER'S REPORT	
<p>Candidates were expected to know how to calculate underwriting income including how to calculate net earned premiums and net losses based on the catastrophe reinsurance treaty, as well as how to calculate investment income.</p> <p>Common errors included:</p> <ul style="list-style-type: none">• Calculating covered losses of \$110,000 incorrectly• Assuming the catastrophe treaty applies to all losses, not just those from the catastrophic event• Not accounting for the reinstatement premium (2% of \$450,000)• Not using cash as investment in the investment income calculation• Not reducing cash and bonds by the ceded premium and reinstatement premium• Calculating net income incorrectly, for example:<ul style="list-style-type: none">○ Not including expenses○ Not including investment income○ Including assets	