17. (3 points)

The following information is available for a property and casualty insurance company starting operations on January 1, 2017. All amounts are in thousands of dollars ($000s).

The company considers purchasing the following aggregate excess of loss treaty to stabilize its loss experience:

- The treaty will be effective on January 1, 2017, and will expire on December 31, 2017.
- It will cover 100% of losses and LAE above 600.
- The premium is 100 and payable at start of the year.
- There is no ceding commission and no profit commission.
- For simplicity, assume there is no discounting of unpaid claims and no provisions for adverse deviations.
- The company purchases no other reinsurance.
- The investment return rate is 0%.
- The income tax rate is 0%.

The actuary forecasts three possible scenarios of underwriting results for the year.

Scenario	Incurred Losses and Adjustment Expenses	Losses Paid In 2017	Probability
A	400	100	25%
B	500	100	50%
C	800	200	25%

The actuary also forecasts the following for the company's financial statements on December 31, 2017, under Scenario C without purchasing the treaty.

Scenario C Without Reinsurance	
Written premium	1,550
Earned premium	750
Incurred losses	800
Operating expenses	200
Unpaid claims	600
Unearned premiums	700
Other liabilities	0
Surplus	1,100

<< QUESTION 17 CONTINUED ON NEXT PAGE >>

a. (0.75 point)

Briefly describe three functions of reinsurance other than stabilizing loss experience.

b. (1.5 points)

Calculate the following for Scenario C with reinsurance.

i. Net written premium
ii. Net earned premium
iii. Net unearned premiums
iv. Net incurred losses
v. Underwriting income
vi. Net unpaid claims

c. (0.75 point)

Assess whether this aggregate excess of loss treaty qualifies as reinsurance.

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QUESTION 17	
TOTAL POINT VALUE: 3 points	**LEARNING OBJECTIVE: C1**
SAMPLE ANSWERS	
Part a: 0.75 point	
Any three of the following: • Increase large line capacity • Provide catastrophe protection • Provide surplus relief • Facilitate withdrawal from a market segment • Provide underwriting guidance	
Part b: 1.5 points	
There were inconsistencies with the information provided in the question that affected the net earned premium calculation. As a result, we accepted both solutions as shown below. *Sample 1* i. NWP = 1,550 – 100 = 1,450 ii. NEP = = 1,450 + 0 – 700 = 750 iii. NUEP = 700 – 0 = 700 iv. Net IL = Min(800, 600) = 600 v. UW Incurred = 750 – 600 – 200 = -50 vi. Net unpaid= 600 – 200 = 400 *Sample 2* i. NWP = 1,550 – 100 = 1,450 ii. NEP = 750 – 100 =650 iii. NUEP = 700 – 0 = 700 iv. Net IL = 600 v. UW Incurred = 650 – 600 – 200 = -150 vi. Net unpaid = 600 – 200 = 400	

Part c: 0.75 point

Sample 1

It can qualify if there is at least 10% change to make a 10% loss.
Scenario C has a probability of 25%. The loss to the reinsurer is -$100, or -100/100 = -100%
Therefore, it qualifies.

Sample 2

For scenario A and B the reinsurer pays nothing. However, for scenario C, the reinsurer incurs a deficit equal to (100-200)/100 = -100% of the premium. According to the ERD rule, there is risk transfer if ERD > 1%. Here ERD is 25%*100% = 25%. There is risk transfer so qualifies as reinsurance.

Sample 3

Yes, this qualifies as reinsurance because the risk transfer is reasonably self-evident because there are no limiting risk transfer contract features. There is a reasonable chance (25%) of the significant transfer of material risk.

EXAMINER'S REPORT

Candidates were expected to know the functions of reinsurance, understand the effect of reinsurance on financial statements and understand the concept of risk transfer.

Part a

Candidates were expected to list three functions of reinsurance.

Common errors include:

- For candidates that related the reinsurance function to the introduction of a new line of business, in addition to providing underwriting guidance, only one of the two (not both) responses were accepted.
- Responding with an answer that discussed stabilizing or mitigating loss experience.

Part b

Candidates were expected to calculate each of the components from the information given.

Common mistakes include:

- Using the incorrect formula: NUEP = NWP – NEP
- Calculation errors

Part c

Candidates were expected to identify the approach, provide supporting calculations and comment on whether the excess of loss treaty qualifies as reinsurance.

Common errors include:

- Answering "yes" or "no" without providing any explanations.

- Identifying the rule and commenting on whether the treaty qualifies as reinsurance without providing calculation support.