2. (2.5 points)

An insurance company writes both 6-month and 12-month automobile policies. Given the following information:

Policy	Original Effective Date	Original Expiration Date	Transaction Effective Date	Territory	Full-Term Written Premium	Notes
A	January 1, 2015	December 31, 2015	January 1, 2015	1	$1,000	Start of New Policy
A	January 1, 2015	December 31, 2015	July 1, 2015	1	N/A	Policy Canceled
B	July 1, 2015	June 30, 2016	July 1, 2015	1	$500	Start of New Policy
B	July 1, 2015	June 30, 2016	September 30, 2015	2	$400	Relocated to Territory 2
C	October 1, 2015	March 31, 2016	October 1, 2015	2	$1,000	Start of New Policy

- Full-term written premium represents the policy premium if policy characteristics shown were in place from original effective date to original expiration date.

a. (0.75 point)

Calculate the 2015 calendar year written premium as of December 31, 2015.

b. (0.75 point)

Calculate the 2015 calendar year earned premium as of December 31, 2015.

c. (0.5 point)

Calculate the in-force premium as of October 1, 2015.

d. (0.5 point)

Calculate the 2015 calendar year earned exposures separately for Territory 1 and Territory 2 as of December 31, 2015.

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QUESTION 2

TOTAL POINT VALUE: 2.5 | **LEARNING OBJECTIVE(S): A1, A2**

SAMPLE ANSWERS

Part a: 0.75 point

Sample 1

A 1000 – 500 = 500
B 0.25*500 + 0.75*400 = 425
C 1000
1925

Sample 2

A: 1000 – 500 = 500 (cancels at midpoint)
B: 500 – (¾)*500 +(¾)*400 (equivalent to cancel 3/4 of the way in and rewriting in Terr 1 at cheaper rate)
C: 1000
Total = 500 + 425 + 1000 = 1925

Part b: 0.75 point

Sample 1

A 500
B 0.25*500 + 0.25*400 = 225
C 500
1225

Sample 2

A: 500 (cancels before year is over so ½ of the policy is fully earned in 2015)
B: 500 * (¼) + 400 *(¼) = 225 (¼ of each portion in each terr is earned in 2015)
C: 500 = 1000 * 6/12 6 month policy, so ½ is earned in 2015
Total = 500 + 225 + 500 = 1225

Part c: 0.5 point

A: not in force
B: 400
C: 1000
Total = 400 + 1000 = 1400

Part d: 0.5 point

Policy	Terr1 earned expo	Terr2 earned expo
A	0.5	0
B	0.25	0.25
C	0	0.25 = (0.5/2)
	0.75	0.5

EXAMINER'S REPORT

This question required candidates to understand the differences between written, earned, and in-force premium and exposures. Two mid-term policy adjustments and a combination of 6- and 12-month policies were included to fully test these concepts. While some candidates were unsure how the different terms and adjustments impacted each calculation, the majority of

candidates performed well on this question. The calculations were straightforward and did not pose a challenge for most candidates.

Candidates were expected to know:

- Aggregation of written premium, earned premium and in-force premium from a policy database
- Aggregation of earned exposure from a policy database

Part a

Candidates were expected to calculate the correct written premium for each policy.

Common mistakes included:

- Policy A: failing to correctly account for the mid-term cancellation, either by removing or including the entire original $1,000 written premium.
- Policy B: misusing the $400 new territory premium as additional new premium to the policy, and simply adding $500 and $400 together. Candidates should understand that $400 was the full-term written premium (equivalent to 12 months for Policy B) and was in effect for 9 months. The $500 full-term written premium was only in effect for 3 months.
- Policy C: assuming that the full-term written premium was an annual premium, including only $500 in written premium for 2015. Candidates should understand that the full term of Policy C is 6 months, as indicated by the effective and expiration dates, so $1,000 is written in 2015.

Part b

Candidates were expected to calculate the correct earned premium for each policy.

Common mistakes included:

- Policy A: failing to account for the mid-term cancellation.
- Policy C: failing to recognize that Policy C is a 6-month policy, such that 50% of the premium is earned in 2015
- Policy C: assuming that the full-term written premium was an annual premium, including only 50% x $500 = $250 earned in 2015. Candidates should understand that the full term of Policy C is 6 months, as indicated by the effective and expiration dates, so $500 is earned in 2015.

Part c

Candidates were expected to calculate the correct in-force premium for each policy.

Common mistakes included:

- Policy A: failing to account for the mid-term cancellation and therefore included Policy A as an in-force policy.
- Policy B: failing to use the written premium that was in-force on October 1, 2015 ($400) and instead used some combination of $500 and $400.

Part d

Candidates were expected to calculate the correct earned exposure for each policy, and the correct allocation by territory.

Car-years is the most common exposure base for automobile policies, which almost every candidate used.

Common mistakes included:

- Failing to correctly allocate the exposures between territories, or altogether forgot to allocate by territory.
- Using earned premium as an exposure base, instead of car-years.
- Failing to account for the mid-term cancellation of policy A.
- Failing to recognize that policy C is a 6-month policy, representing 0.5 car-years for the full term, and earning 0.25 car years in 2015.