

EXAM 6 – UNITED STATES, SPRING 2018

10. (3 points)

The following information is calculated from an insurance company's 2016 Annual Statement (all figures are in thousands of dollars).

	Commercial Multi-Peril	Workers' Compensation	All Lines
Written premium in 2016	18,500	10,000	28,500
Earned premium in 2016	20,000	9,000	29,000
Accident year 2016 ultimate loss	12,100	7,500	19,600
Change in accident year 2015 and prior ultimate loss	(200)	100	(100)

Underwriting and Investment Exhibit	Loss Adjustment Expenses	Other Underwriting Expense	Investment Expenses	Total
Total expenses incurred	1,300	2,400	150	3,850
Total expenses paid	1,305	2,100	160	3,565

	All Lines
Net investment income earned	3,200
Net realized capital gains	45
Net unrealized capital gains	6
Net gain (loss) from agents' or premium balances charged off	(2.2)
Finance and service charges not included in premiums	3.5
Aggregate write-ins for misc. income	(1.5)
Dividends to policyholders	80
Dividends to stockholders	525

a. (2 points)

Calculate the 2016 statutory net income.

b. (0.5 point)

The company spent \$1,000,000 on a Workers' Compensation advertising campaign during 2016. The company allocated all expenses to line of business based on earned premium. Describe how this expense allocation methodology could impact the company's view of the profitability of the Workers' Compensation book.

c. (0.5 point)

Briefly describe two reasons an actuary might be involved in the allocation of expenses to line of business.

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SAMPLE ANSWERS AND EXAMINER'S REPORT

Common mistakes included:

- Saying this item was used to pay losses without mention of collateral, security, or administrative benefits

iv. Candidates were expected to mention uncollectability on recoverables from reinsurers, and that the amount was a formulaic or estimated number. Candidates were expected to know this was a liability.

Common mistakes included

- Saying this was the actual amount of uncollectible recoverables (not an estimate).

QUESTION: SPRING 2018 EXAM 6U, QUESTION 10	
TOTAL POINT VALUE: 3	LEARNING OBJECTIVES: C1
SAMPLE ANSWERS	
Part a: 2 points	
<ul style="list-style-type: none"> • $EP = 29000, IL = (19600 - 100), LAE = 1300, OUE = 2400, \text{Inv Income Earned} = 3200, \text{Realized Gains} = 45, \text{Agents Balances} = -2.2, \text{Service Charges} = 3.5, \text{Agg Write Ins} = -1.5, PHD = 80$ $\text{Net Income} = 29000 - (19600 - 100) - 1300 - 2400 + 3200 + 45 - 2.2 + 3.5 - 1.5 - 80 = 8964.8$ • $\text{Net Income} = 29000 - 19500 - (3850 - 150) + 3200 + 45 - 2.2 + 3.5 - 1.5 - 80 = 8964.8$ • $29000 - (19600 - 100 + 1300) - 2400 = 5800, 3200 + 45 = 3245, -2.2 + 3.5 - 1.5 - 80 = -80.2,$ $\text{Net Income} = 5800 + 3245 - 80.2 = 8964.8$ • $29000 - (19600 - 100 + 1300) - 2400 = 5800, 3200 + 45 = 3245, -2.2 + 3.5 - 1.5 = -0.2,$ $\text{Net Income} = 5800 + 3245 - 0.2 - 80 = 8964.8$ 	
Part b: 0.5 point	
<ul style="list-style-type: none"> • Inaccurate allocation of expense to appropriate line of business distorts company view of profitability. WC might appear more profitable than it is while other lines might appear less profitable due to other lines take on expense of WC. • Allocating this expense could cause other lines to subsidize WC if their earned premium is higher than WC line so WC might be viewed profitable when it is not. • This allocation would make WC look more profitable. The entire 1 million should be allocated only to WC. • It will make the worker's comp line look more profitable than it is because the allocated expense is less than the actual expense. • Expense directly attributed to a line of business should be directly allocated. Sharing with other lines of business will understate expense and overstate profits for WC. • Because CMP is the larger portion of the book it will get hit with the majority of the \$1m expense. WC will have lower expenses than what they actually/truly cost the company, overstating WC profitability. 	
Part c: 0.5 point	
<ul style="list-style-type: none"> • Misallocation of expenses results in subsidies between lines of business • Misallocation of expenses will affect profitability of individual lines 	

SAMPLE ANSWERS AND EXAMINER'S REPORT

- Misallocation of expenses can result in anti-selection and distorted profitability
- Misallocation of expenses can impact pricing/ratemaking

EXAMINER'S REPORT

Part a

Candidates were expected to calculate statutory net income, including the correct use of earned premium, calculation of incurred loss, expenses, investment income, and various line items that are included in statutory net income.

Common errors included:

- Mishandling of changes in prior year's reserves
- Deducting investment expenses from investment income, thereby double counting investment expenses

Part b

Candidates were expected to understand how allocation of expenses impacts the bottom line for a particular product/line of business and the impact various allocations would have moving forward. Candidates were also expected to comment on the appropriate treatment of expenses that are specific to a particular product or line of business.

Common errors included:

- Relating allocation of advertising expense based on an EP vs WP

Part c

Candidates were expected to have knowledge of the common responsibilities and activities of actuaries within the context of an insurance organization. They were also expected to have an appreciation for the relationship between those responsibilities and activities and the assignment and/or allocation of expenses to line of business. As well they were expected to comment on the implications of incorrect assignments and allocations.

Common errors included:

- Discussing an actuary's involvement in the amount of total expense rather than allocation of expenses to LOB.