18. (7 points)

An insurance company began operations in 2008. The following information is from the company's 2012 financial statements (all figures are in thousands of dollars):

Net Written Premium	70,000
Unearned Premium Reserve (year-end)	45,000
Underwriting Expenses	16,250
Adjusting and All Other Expenses	0
Realized Capital Gains	1,500
Investment Income from Taxable Bonds	1,000
Change in Unrealized Capital Gains	500
Policyholder Dividends	200
Dividends Received from Unaffiliated Entities	800
Investment Income from Municipal Bonds	2,800

Schedule P Part 1 – Summary		
Years in Which Premiums Were Earned and Losses Were Incurred	Premiums Earned ($000 omitted)	
	Direct and Assumed	Ceded
2008	50,000	10,000
2009	60,000	15,000
2010	70,000	20,000
2011	75,000	15,000
2012	85,000	20,000

Schedule P Part 2 – Summary					
Years in Which Losses Were Incurred	Incurred Net Losses and Defense and Cost Containment Expenses Reported at Year End ($000 omitted)				
	2008	2009	2010	2011	2012
2008	20,000	30,000	36,000	37,000	37,500
2009	xxx	22,000	33,000	40,000	42,000
2010	xxx	xxx	30,000	36,000	40,000
2011	xxx	xxx	xxx	34,000	43,500
2012	xxx	xxx	xxx	xxx	32,000

<<QUESTION 18 CONTINUED ON NEXT PAGE>>

18. (continued)

Schedule P Part 3 – Summary					
Years in Which Losses Were Incurred	Cumulative Paid Net Losses and Defense and Cost Containment Expenses Reported at Year End ($000 omitted)				
	2008	2009	2010	2011	2012
2008	5,000	10,000	20,000	25,000	35,000
2009	xxx	6,000	13,000	22,000	31,000
2010	xxx	xxx	7,500	16,000	24,000
2011	xxx	xxx	xxx	12,000	21,000
2012	xxx	xxx	xxx	xxx	9,000

The following information is used to calculate federal income tax (all figures are in thousands of dollars):

Prior Year Alternative Minimum Income Tax Credit	500
Beginning Average Reserve Discount Factor	90%
Ending Average Reserve Discount Factor	85%
Regular Income Tax Rate	35%
Alternative Minimum Tax Rate	20%

a. (6.25 points)

Calculate the insurance company's 2012 Statutory Net Income.

b. (0.75 point)

Briefly describe three considerations for the insurance company when determining the allocation of stocks and bonds in its investment portfolio.

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18. <u>Sample Answers</u>

a.

<u>INDIRECT METHOD:</u>

Net EP = 85,000 – 20,000 = 65,000
Net IL = 32k + (43.5k – 34k) + (40k – 36k) + (42k – 40k) + (37.5k – 37k) = 48,000
U/W Profit = 65,000 – 16,250 – 48,000 = 750

Investment Income = 1,000 + 1,500 + 800 +2,800 = 6,100

Net Income Pre-Tax = 750 + 6,100 – 200 = 6,650

Revenue Offset:
Chg UEPR = 2012 WP – 2012 EP = 70,000 – 65,000 = 5,000
Offset = 5,000 * 0.2 = 1,000

Chg in Reserve Disc:
Beg Reserve = (37k – 25k) + (40k – 22k) + (36k – 16k) + (34k – 12k) = 72,000
End Reserve = (37.5k – 35k) + (42k – 31k) + (40k – 24k) + (43.5k – 21k) + (32k – 9k) = 75,000

Chg = 75,000 * (1 – 0.85) – 72,000 * (1 – 0.90) = 4,050

Tax Exempt Investment Income:
Municipal Bonds: 2,800 * 0.85 = 2,380
Dividends: 800 * [1 – (0.3 + 0.7*0.15)] = 800 * 0.595 = 476

Regular Taxable Income = Net Income Pre-tax + Revenue Offset + Chg in Res Discount – Tax Exempt Investment Income

6,650 + 1,000 + 4,050 – 2,856 = 8,844

Regular Income Tax = RTI * 35% = 8,844 * 0.35 = 3,095.40

Alternative Minimum Taxable Income = RTI + 75% * (Tax Exempt Investment Income)
= 8,844 + 0.75 * 2,856
= 10,986

Alternative Minimum Tax = AMTI * 20% = 10,986 * 0.20 = 2,197.20

Tax Liability = max(3,095.40 – 500, 2,197.20) = 2,595.40

Net Income = 6,650 – 2,595.40 = 4,054.60

<u>DIRECT METHOD:</u>

Net EP = 85,000 – 20,000 = 65,000
Chg UEPR = 2012 WP – 2012 EP = 70,000 – 65,000 = 5,000
Net IL = 32k + (43.5k – 34k) + (40k – 36k) + (42k – 40k) + (37.5k – 37k) = 48,000

Investment Income = 1,000 + 1,500 + 800 +2,800 = 6,100

Chg in Discounted Reserves:
Beg Reserve = (37k – 25k) + (40k – 22k) + (36k – 16k) + (34k – 12k) = 72,000
End Reserve = (37.5k – 35k) + (42k – 31k) + (40k – 24k) + (43.5k – 21k) + (32k – 9k) = 75,000

Chg = 75,000 * 0.85 – 72,000 * 0.90 = -1,050

Paid Loss = 9k + (21k – 12k) + (24k – 16k) + (31k – 22k) + (35k – 25k) = 45,000

Taxable EP = 70,000 – 0.8 * 5,000 = 66,000
Taxable IL = Paid Loss + Chg Discounted Reserves = 45,000 – 1,050 = 43,950

Taxable Investment Income:
Municipal Bonds: 2,800 * 0.15 = 420
Dividends: 800 * (0.3 + 0.7 * 0.15) = 800 * 0.405 = 324

Taxable Investment Income = 1,000 + 1,500 + 420 + 324 = 3,244

Regular Taxable Income = Tax EP – Tax IL – Exp + Tax Inv Inc – P/H Div

66,000 – 43,950 – 16,250 + 3,244 – 200 = 8,844

Regular Income Tax = RTI * 35% = 8,844 * 0.35 = 3,095.40

Alternative Minimum Taxable Income = RTI + 75% * (Tax Exempt Investment Income)
= 8,844 + 0.75 * (6,100 – 3,244)
= 10,986

Alternative Minimum Tax = AMTI * 20% = 10,986 * 0.20 = 2,197.20

Tax Liability = max(3,095.4 – 500, 2,197.20) = 2,595.40

Net Income = 65,000 – 48,000 – 16,250 + 6,100 – 200 – 2,595.4 = 4,054.60

b. Any three of the following:
- Yields for stocks are typically higher than yields for bonds
- Stocks are more volatile than bonds, and management dislikes erratic income
- Taxes are minimized when stocks and bonds are allocated such that the regular income tax equals the alternative minimum income tax
- Stocks, like loss reserves, are inflation sensitive. Bonds are typically not inflation sensitive.
- State mandated limits on investment holdings may dictate permissible allocations of stocks versus bonds
- Stocks have a higher RBC charge than most bonds
- Should reduce investment risk through diversification by having a proper mix of stocks and bonds
- Stocks are more liquid than municipal bonds
- Should allocate stocks and bonds such that the duration of assets equals the duration of liabilities

18. Examiner's Report

a. Part a of this question involved some very straightforward calculations (EP, incurred loss, change in UEPR, investment gain, etc) and some more challenging calculations (reserve discount, tax-exempt portion of bonds, etc). Common errors included:
   - Only including the Incurred Loss from Accident Year 2012 (32,000 instead of 48,000)
   - Policyholder dividends is part of Other Income, it is not part of Underwriting Income or Investment Income
   - Change in Unrealized Capital Gains is a direct charge to surplus and is not to be considered in the Income Calculation
   - Using the Unearned Premium Reserve instead of the Change in the Unearned Premium Reserve (45,000 instead of 5,000)
   - Incorrectly calculating the beginning and/or ending reserves
   - The indirect method uses the change in the reserve discount while the direct method uses the change in discounted reserves
   - Policyholder dividends is part of Regular Taxable Income
   - Many candidates did the maximum (RIT, AMIT) – credit versus maximum(RIT – credit = ARIT, AMIT)
   - A few candidates interpreted "net income" to mean "net of reinsurance" rather than "net of taxes". However, the syllabus is very clear about what net income means: the annual statement and specifically the statement of income, line 20 says "Net Income", line 19 is federal and foreign income taxes, and line 20 includes line 19.

b. Although this part was more open-ended, a variety of considerations could be listed, and most candidates were able to do so. Instead of briefly describing, many candidates only provided a list, which received partial credit.

19. Sample Answers

a.

Sample 1
   - The $4K of pmt plan service fees does not get included in premium
   - If policies are written evenly through month, then January should have been weighted 23/24, Feb 21/24 … Dec 1/24
   - NAIC Bond 1 should be carried at amortized cost = $650

Sample 2
   - Plan Service fee should be put under other income rather than added to written premium
   - Earned premium calculation is incorrect. For example the earned premium fraction for Jan should be 1/24 + 11/12 = 23/24 rather than 12/12
   - NAIC bond rating 1 should be recorded as amortized cost rather than fair value

Sample 3
   - Payment plan service fee should not be part of premium calculation
   - The way EP is calculated, earned function should consider mid-month
   - Bonds: 650 + 10 + 5 --> Bond Rating 1 should use amortized cost

Sample 4