FA Module 20 GAAP premium deficiency practice exam questions

On March 1, 2020, an insurer writes a one-year motor insurance contract and collects the full premium of 729. The cash received is held in a non-interest bearing checking account. The estimated claims for the policy year are 561 (nominal value) and 531 (present value). To compute the percentage of the policy term that has been earned, assume all months have 30 days and the year has 360 days. The insurer reports under GAAP (SFAS 60) and uses present values for premium deficiency computations.

Expenses paid at policy inception are

- Agents' commission = 10% of premium
- Underwriting costs = 58
- Modifications to a web site = 44 (not deferrable)

On November 15, 2020, a claim of 147 is paid. At December 31, 2020, the estimated costs for other incurred claims is 252 (nominal value) and 221 (present value). The estimated claims for the unexpired portion of the policy year are re-estimated as 643 (nominal value) and 580 (present value).

Question 20.1: Percentage earned

What percentage of the policy year is earned in 2020?

Answer 20.1: Ten months (March 1 through December 31) = 10 / 12 = 83.3333%

Question 20.2: DPAC

What is the deferred policy acquisition cost (DPAC) when the policy is written?

Answer 20.2: 10% × 729 + 58 = 130.90

(DPAC = agents' commission percentage × gross premium + underwriting expenses)

Question 20.3: Incurred claims

What are the incurred claims in 2020?

Answer 20.3: 147 + 252 = 399.00

(incurred claims = paid claims + nominal value of reserves for unpaid claims)

Question 20.4: Unearned premium reserve

What is the unearned premium reserve at December 31, 2020?

Answer 20.4: (1 – 83.3333%) × 729 = 121.50

(unearned premium reserve = gross premium × percentage of policy still unearned)

Question 20.5: Net unearned premium reserve

What is the net unearned premium reserve (gross unearned premium reserve minus the DPAC before the reduction for the premium deficiency) at December 31, 2020?

Answer 20.5: (1 – 83.3333%) × (729 – 130.90) = 99.68

(net unearned premium reserve = (gross premium – DPAC) × percentage of policy still unearned)

Question 20.6: Deferred policy acquisition cost

What is the unamortized deferred policy acquisition cost (DPAC) at December 31, 2010, before adjusting for the premium deficiency?

Answer 20.6: (1 – 83.3333%) × 130.90 = 21.82

(unamortized DPAC = DPAC at policy inception × percentage of policy still unearned)

Question 20.7: Premium deficiency

What is the premium deficiency at December 31, 2020?

Answer 20.7: 580 – 99.68 = 480.32

(premium deficiency: insurer elects to use present value of unpaid claims – net unearned premium reserve)

Question 20.8: Premium deficiency reserve

What is the premium deficiency reserve at December 31, 2020?

Answer 20.8: 480.32 – 21.82 = 458.50 or 580 – 121.50 = 458.50

(premium deficiency reserve = premium deficiency – unamortized DPAC)

Question 20.9: Earned premium

What is the earned premium in 2020?

Answer 20.9: 83.3333% × 729 = 607.50

(earned premium = percentage earned × gross premium)

Question 20.10: Losses and expenses

What are losses and expenses in 2020?

Answer 20.10: 44 + 147 + 252 + 130.90 + 458.50 = 1,032.40

(losses and expenses = non-deferrable expenses + claims paid + *nominal* value of unpaid claims that have already occurred + amortization of DPAC + DPAC reduced for premium deficiency + premium deficiency reserve; DPAC here is reduced to zero, so the full DPAC is amortized in 2020)

Question 20.11: Pre-tax income from insurance contract

What is the pre-tax income from this insurance contract in 2020?

Answer 20.11: 607.50 – 1,032.40 = (424.90)

(pre-tax income = earned premium – expenses & losses)