

SOA真题November2004Course8I PDF转换可能丢失图片或格式
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https://www.100test.com/kao_ti2020/84/2021_2022_SOA_E7_9C_9F_E9_A2_98N_c50_84149.htm COURSE 8I: Fall 2004 -1- GO ON TO NEXT PAGE Individual Insurance U.S.Morning

Session**BEGINNING OF EXAMINATION 8**INDIVIDUAL INSURANCE U.S.MORNING SESSION1. (5 points) ABC Life has

a career agency distribution system. ABC ' s management is reviewing their financing plan for new agents.(a) Describe the different types of financing plans for new agents and explain

theadvantages and disadvantages of each according to LIMRA.(b)

You are given the following information: Year Average Annualized First Year Premium Agent Termination Rate Subsidy

Validation Schedule Commission1 \$60,000 50% 120% \$20,0002

\$80,000 25% 80% \$25,0003 \$100,000 10% 40% \$30,0004 \$120,000

0% 0% \$0#8226. Agent termination occurs at the end of the

year.#8226. The interest rate is 0%.(i) Calculate the average financing cost for a new agent as a percentage of first year premium for each of

the first three years. Show all work.(ii) Determine the number of years it will take for ABC to recover the financing costs on 100 new

agents. Show all work.COURSE 8I: Fall 2004 -2- GO ON TO NEXT

PAGE Individual Insurance U.S.Morning Session2. (11 points) XYZ Life is evaluating a block of identical special life contingent

annuities issued January 1, 2004 by ABC Life. You are given:#8226.

Assumed investment interest rate on required capital is 4%.#8226.

Each annuity payment is \$71,280.#8226. Deaths occur at the end of

the year before the annuity payment. No taxes or maintenance expenses.

	Actual	Projected	1/1/2004	12/31/2004	12/31/2005	12/31/2006
Policy count	100	75	50	25		
Solvency reserves (' 000s)	\$9,864	\$5,011	\$1,697	\$0		
Premium (' 000s)	\$10,000	\$0	\$0	\$0		
Commission (' 000s)	\$400	\$0	\$0	\$0		
Benefits (' 000s)	\$0	\$5,346	\$3,564	\$1,782		
Investment income on solvency reserves and cashflows (' 000s)	\$0	\$838	\$426	\$144		

(a) (3 points) Explain the process for determining the statutory valuation rate under the Standard Valuation Law for these life contingent annuities. (b) (4 points) Calculate the embedded value of this block at January 1, 2004. Show all work. (c) (3 points) You are given the following binomial distribution for mortality:

n	q	$f(25)$	$F(25)$
100	0.25	0.0918	0.5525

Calculate the probability of solvency earnings exceeding \$250,000 in 2004. Show all work. (d) (1 point) On January 1, 2005, XYZ Life buys the remaining block of 75 contracts. Calculate the maximum amount of assets ABC transfers to XYZ assuming no transaction expenses. Show all work.

COURSE 8I: Fall 2004 -3-
 GO ON TO NEXT PAGE Individual Insurance U.S. Morning
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