

SOA真题November2004Course5 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_84091.htm COURSE 5 MORNING SESSION APPLICATION OF BASIC ACTUARIAL PRINCIPLES SECTION A-WRITTEN ANSWER COURSE 5: Fall 2004 - 2 - GO ON TO NEXT PAGE Morning Session **BEGINNING OF EXAMINATION** COURSE 5 MORNING SESSION 1. (4 points) (a) Describe the coverage in a business overhead expense disability income policy. (b) You are given the following information: Maximum monthly benefit 30,000 Maximum multiple of monthly benefit 15 Maximum benefit period 24 months Insured start of disability January 1, 2003 Insured end of disability March 1, 2005 Elimination period 90 days Calculate the payout to the insured for each of the scenarios: Scenario Monthly Overhead Expense I 36,000 II 18,000 III 22,500 Show all work. 2. (6 points) With respect to group health care benefits: (a) Describe the various providers. (b) Describe the various buyers. COURSE 5: Fall 2004 - 3 - GO ON TO NEXT PAGE Morning Session 3. (4 points) (a) Describe the actions a life insurance company can take to limit the effect of policyholder misrepresentation. (b) Given the following information for a company that offers life insurance with smoker and nonsmoker rates: Actual smokers 30% of insured Smokers premium rate 5 per 1,000 Non-smoker premium rate 3 per 1,000 Expenses None Calculate the amount of profit lost per 1,000 if 10% of smokers lied about smoking and were issued as non-smokers. Show all work. COURSE 5: Fall

2004 - 4 - GO ON TO NEXT PAGE Morning Session 4. (6 points)

For a defined benefit pension plan, you are given the following information: Plan formula: $1\% \times 3\text{-year Final Average Earnings} \times \text{years of service from hire}$ Plan participants as of January 1, 2005:

Participant	Attained Age	Prior Year Earnings	Service to Date	Probability of surviving in service to age 65	Temporary employment-based life annuity of 1 per year
X	40	35,000	0	0.5040	11.8338
Y	50	50,000	10	0.6547	9.1844

Actuarial assumptions: (12)
a#1048581.65 9.4131 Interest rate 7% Assumed future annual salary increases 5% Pay increases Beginning of the year Actuarial cost method Entry age normal Normal retirement age 65 Benefits payable for termination prior to normal retirement age None Calculate the plan's normal cost and accrued liability as of January 1, 2005. Show all work.

5. (3 points) For variable annuities: (a) Describe common death benefit options. (b) Describe the effect of a decline in account value due to investment performance for each death benefit option.

COURSE 5: Fall 2004 - 5 - GO ON TO NEXT PAGE Morning Session 6. (7 points) Describe the steps an insurance company takes to develop an individual life insurance product.

7. (5 points) For a current medical plan and a proposed change to that plan, you are given the following:

	Deductible	Coinsurance	Out-of-pocket maximum (excluding deductible)	Lifetime maximum
Current Plan	100	80%	1,000	None
Proposed Plan	200	75%	1,400	None

Manual cumulative probability distribution Range of Claims Frequency Average Annual Claims Annual cost Accumulated Frequency Accumulated Annual Cost

0	0.25	0	0.00	1.00	3,500	0.01	50.00	0.05	40
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2.00 0.75 3,500 50.01-150.00 0.10 100 10.00 0.70 3,498 150.01-250.00
0.20 210 42.00 0.60 3,488
4,000.01-5,000.00 0.03 4,500 135.00 0.12 2,500 5,000.01-6,000.00
0.02 5,400 108.00 0.09 2,387 Assuming no change in utilization,
calculate the percentage change on net medical claims for the
proposed plan change. Show all work. 100Test 下载频道开通，各
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