

MAY, 2010

A-1

ACTUARIAL SCIENCE EXAMINATION

FOUNDATIONS OF CASUALTY ACTUARIAL SCIENCE – PART-I

Time : 3 Hours

Total Marks : 100

Multiple choice : (all questions carry 2 marks each).

1. Actuarial Science has borrowed its procedure from a variety of other sciences listed below:-
 - A Economics
 - B Psychology
 - C Finance
 - D Statistics
 - E Financial EngineeringWhich of the above, if any, is incorrect?

2. Actuaries must be skilled in a variety of fields as listed below :-
 - A Marketing
 - B Economics
 - C Accounting
 - D Human Resource Development
 - E Computer TechnologyWhich of the above, if any, is untrue?

3. Which of the following is not a risk financing technique?
 - A Risk retention
 - B Risk Avoidance
 - C Contractual transfer to a non-insurer
 - D Transfer to an insurer

4. Some of the steps required to be taken for developing an individual risk rating system are listed below:-
 - A Determine the goals for the system
 - B Determine what is to be allocated
 - C Decide whether the system will be prospective, retrospective or a combination
 - D Design the scheduled rating portion of the system
 - E Consider any other desired plan features such as the minimum and maximum premium charge.Which of the above, if any, is not a required step?

5. Based on the following information :-

Ending claim liability on 31.12.2009

Rs. 2 lakhs

Incurred claim liability in 2009

Rs. 10 lakhs

Paid losses in the year 2009

Rs. 9 lakhs

The opening claim liability as on 1.1.2009 was

A 3,00,000

B 2,00,000

C 1,00,000

D 4,00,000

6. The term ULAE stands for

A University Level Actuarial Education

B Unutilised Legal Administrative Expenses

C Uninsured loss adjustment expenditure

D None of the above.

Which of the above alternatives Correct ?

7. Fill in the blanks in the following sentences

A The Term _____ is used to describe the changes that take place in the value of claims over time.

B The loss _____ is the difference between the carried reserve and the required reserve.

8. Credibility can have the following possible values:-

A 1.02

B 0.75

C 0.61

D 0.22

Which one of the above is not a possible value ?

9. Utility theory is a useful way for insurers to analyse whether

A The premium income is properly utilised

B Their insurance has a market at the price it is offered

C The agency force is fully utilised

D Accounting methods ensure quick audit.

Which one of the above is correct?

10. If a company had 50,000 cars insured during the whole year 2008. And it settled 2,250 claims during the year 2008 out of which 150 claims settled were in respect of accidents that took place in the year 2007. It was found that 400 claims in respect of the year 2008 were settled in 2009 and that there were no claims outstanding in respect of the year 2008, the claim frequency during the year 2008 for 1000 exposures was :-
- A 31.00
 - B 41.00
 - C 51.00
 - D None of the above

Which one of the above is the correct answer?

11. Following are the external factors beyond the insurer's control that affect their profitability.
- A Inflation
 - B Interest rates
 - C Unemployment rates
 - D Stability of the Government

Which of the above, if any, is incorrect?

12. Generally insurers maintain claim data according to following dates :-
- A Policy issue date
 - B Accident date
 - C Report date

Which of the above dates, if any, is least relevant?

13. Loss reserve estimation strategy can be broken into following phases:-
- A Exploratory analysis of data
 - B Application of appropriate estimation techniques
 - C Evaluation of the results of the various reserve methods used
 - D Monitoring projections of reserve development over the subsequent calendar periods.

Which of the above phases, if any, is not necessary ?

14. The following are the losses of concern to risk managers :
- A Personal Loss
 - B Property loss
 - C Loss of reputation
 - D Legal liability

Which of the above, if any, is wrong?

15. Examine the following two statements and state if they are true or false.
- A A risk neutral decision maker would have a utility function that is linear.
 - B A risk averse decision maker would have a utility function that decreased at progressively lower rates.

Essay type questions (All questions carry 10 marks each)

16. Describe in details the basic rate-making processes.
17. Define liability and examine whether the loss reserve satisfies the definition fully or not.
18. Write short notes on
- A Binomial Distribution
 - B The overlap fallacy.
19. Describe the process of Risk Management stating the goals, risk management alternatives and risk control.
20. State the various methods for loss reserve estimation. Which method is most commonly used and why?
21. Enumerate the steps that need to be taken in designing an individual rate making system.
22. What do you understand of the term "Stochastic Simulation"? What is its practical utility? Why it is useful for actuaries working for non-life insurance companies?

..... **The End**