Multiple Choice: (All Multiple Choice Questions carry Two Marks each.)

Q.1. Which of the following is not a Component of Insurance Loss Reserve?
   a) Case Reserve reported by the Ceding Company.
   b) Re-Insurer’s Additional Reserve on Individual Claims.
   c) Actuarial Estimate of Future Development on (a) and (b) above.
   d) Actuarial Estimate of Pure I.B.N.R.

Q.2. Which of the following is incorrect?
   a) Current Ratio : Current Assets divided by Current Liabilities.
   b) Leverage Ratio : Debt divided by Equity.
   c) Return on Equity : Net Income divided by Equity.
   d) Cash Ratio : Cash divided by Current Liabilities.

Q.3. Suppose, $x > 0$, Parameter : $\lambda > 0$
   Distribution Function : $F(x) = 1 - e^{-\lambda x}$
   Probability Density Function : $f(x) = \lambda e^{-\lambda x}$

   The information relates to :
   a) Binomial Distribution.
   b) Exponential Distribution.
   c) Lognormal Distribution.
   d) Poisson Distribution.

Q.4. What does M.P.L. stands for ?
   a) Maximum Possible Loss.
   b) Mean Probable Loss.
   c) Most Profitable Line.
   d) Minimum Profit Level.

Q.5. The standard for Full Credibility is 3,000 Claims. How much Credity is assigned to 1,000 Claims?
   a) 0.333
   b) 0.500
   c) 0.167
   d) 0.575

Q.6. Expected Claim Count = 0.075
   Expected Loss Severity = ₹ 90,000/-
   Past Loss Severity = ₹ 1,00,000/-
   Expected Loss Cost factor = 0.375
Find the Re-Insurance Expected Loss Cost (R.E.L.C.) assuming that the Claim Severity including Loss Adjustment Expense follows Censored Pareto Distribution.

a) 2812.500
b) 2531.25
c) 2926.75
d) 2650.50

Q.7. R.E.L.C. = As Above
Risk Discount Factor = 0.80
Re-Insurance Commission = 25%
Re-Insurance Brokerage Fees = 5%
Re-Insurance's Internal Expense Loading = 15%
Re-Insurer's Target Economic Return = 20%

What is the Re-Insurance Premium?

a) 4726.89
b) 4254.27
c) 4918.98
d) 4454.69

Q.8. Any strategy that eliminates Price Risk Coupon Re-Investment Risk on a Fixed Income Portfolio is known as:

a) Balancing.
b) Immunization.
c) Securitization.
d) None of the above.

Q.9. If the goal is to generate the most accurate insurance rate with least squares as the measure of fit, which of the following model with be the best choice of an Actuary?

a) Buhlmann Credibility Model.
b) Classical Credibility Model.
c) Bayessian Analysis Model.

Q.10. Of the Ratios listed below, which cannot be classified as Profitability Test?

a) Two-Year Operating Ratio.
b) One-Year Reserve Development to Surplus.
c) Investment Yield.
d) Change in Policy-Holders’ Surplus.

Questions: 11 to 14 are based on following Data:

PCP = 1,00,000
PCPLR = 65%
RCF = 1.05 (estimated 5% inadequacy)
RCR = 30%
RBF = 0% (no Broker)
RIXL = 15%
MPL = PML = 1,00,00,000
Attachment Point = 10,00,000
RLIM = 40,00,000  
RITER = 10%  
Excess Loss Cost Factor = 0.367

Q.11. What is Total Expected Loss Cost?  
a) 68,250  
b) 65,000  
c) 61,904  
d) None of the above.

a) 23,855  
b) 25,028  
c) 22,718  
d) 25,000

Q.13 What is Technical Re-Insurance Pure Premium?  
a) 26,505  
b) 25,242  
c) 27,808  
d) None of the above.

Q.14. Hence, what is Technical Re-Insurance Premium?  
a) 46,737  
b) 42,423  
c) 44,546  
d) None of the above.

Q.15. Which of the following items, if any, does not appear in the Balance Sheet of a Non-Life Insurance Company?  
a) I.B.N.R.  
b) General Reserve.  
c) Management Expenses.  
d) Unexpired Premium Reserve.

Essay-Type Questions: (All Essay-Type Questions carry Ten Marks each.)

Q.16. Explain 13-step programme to Re-Insurance Pricing Happiness with specific reference to pricing of “Property Quota Share Treaties”

Q.17. You are given the following:  
a) For a given risk, the number of claims for a single exposure will be 1 with probability of 4/5; or 2 with probability of 1/5.  
b) If only one claim is incurred, the size of claim will be 50 with probability 3/4 or 200 with probability 1/4.  
c) If two claims are incurred, the size of each claim independent of the other will be 50 with probability 60% or 150 with probability 40%.  
Determine the Variance of the Pure Premium for the Risk.

Q.18. State and briefly explain the six general components of a Re-Insurer’s Statutory Loss Reserve.
Q.19. (a) Briefly discuss the problems that are encountered in estimating an Experience Expected Loss Cost, PURELC for pricing of “Working Cover Excess Treaties”.
   (b) List the items to considered in determining the Credibility of the Exposure Loss Cost Estimate.
   (c) List the items to consider in determining the Credibility of the Experience Loss Cost Estimate.

Q.20. Write Short Notes on: (Any Two):
   i) Internal Rate of Return.
   ii) Macaulay Duration and Modified Duration.
   iii) Immunisation.

Q.21. (a) Write a brief note on different types of assets available for investment, their advantages and disadvantages for a General Insurance Company.
   (b) Write a brief note on Asset Liability Management.

Q.22. (a) List and briefly explain, some of the important variables that may be included in a Dynamic Financial Analysis (D.F.A.).
   (b) Briefly comment on the outputs and uses of D.F.A. Models.

END
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