

SOLUTIONS

A) MULTIPLE CHOICE QUESTIONS (1 point each, no penalties, at least 5 to pass)

- 1 Which of the following is an example of adverse selection?
(a) A person in poor health seeks to get health insurance
- 2 A downward sloping yield curve is usually associated with an expected...
(c) reduction in short term interest rates
- 3 Which of the following is evidence supporting the efficient market hypothesis?
(b) mutual funds that overperformed in the past are unlikely to do so again
- 4 In money markets the larger volumes are found in the following segment:
(a) secured transactions
- 5 Many corporate bonds are callable. This means that...
(d) the issuer can redeem them before maturity
- 6 When interest rates are rising sharply, what kind of stock usually loses the most?
(b) growth stocks
- 7 The domestic currency tends to appreciate in the short-term if a decrease occurs in...
(b) imports from abroad relative to exports
- 8 One of the leading assets of a commercial bank is represented by...
(d) the banking portfolio
- 9 Two comparable mutual funds, A and B, see the first having a much higher Sharpe ratio. This means that fund A provides...
(a) a higher return for each unit of risk than fund B
- 10 Which of the following risks affects participants to pension funds?
(d) All of the above

B) OPEN QUESTION (10 points, check your handwriting and don't exceed the space below)

Effects on profits of interest rates growth in bank / non-life insurance

A bank has a long duration of assets and a short one of liabilities, hence a rise in interests causes assets to lose value sharply, but in the form of unrealized losses. On the other hand, the roll-over of the loan/bond portfolio and the delay in variable rates applied to deposits increase the realized profits. Usually this is also boosted by a reduction in credit risks.

In non-life insurers the duration gap between assets and liabilities is limited, so despite interests cause unrealized losses in the bond portfolio, the present value of obligations benefits from the rise in interest rates. However, if interests rise because of inflation, this can affect the current costs of indemnities and, therefore, reduce the current profitability, until prices are adjusted and new bonds are purchased at a higher return.

C) EXERCISE (10 points, briefly explain your calculations and don't exceed the space below)

- A. Ops: 1) mkt order to buy 40; 2) limit sell order for 20 stocks at 33; 3) limit buy order for 40 stocks at 34. 1% fee
 B. Ops: 1) mkt order to sell 40; 2) limit buy order for 20 stocks at 33; 3) limit sell order for 40 stocks at 32. 1% fee

A. 1 is executed for 20 at 34 and 20 at 35; 2 is executed at 33, 3 is not executed
 Total flows: $(20 \cdot 34 + 20 \cdot 35) + (20 \cdot 33) = 2040$
 Fee: $2040 \times (1\% + 1\%) = 40,8$

B. 1 is executed at 33; 2 is not executed, 3 is executed for 20 at 33 and 20 at 32
 Total flows: $(33 \cdot 40) + (20 \cdot 32 + 20 \cdot 33) = 2620$
 Fee: $2620 \times (1\% + 1\%) = 52,4$

BID		ASK	
Q.ty	Px	Px	Q.ty
40	33	34	20
25	32	35	90
100	31	36	35