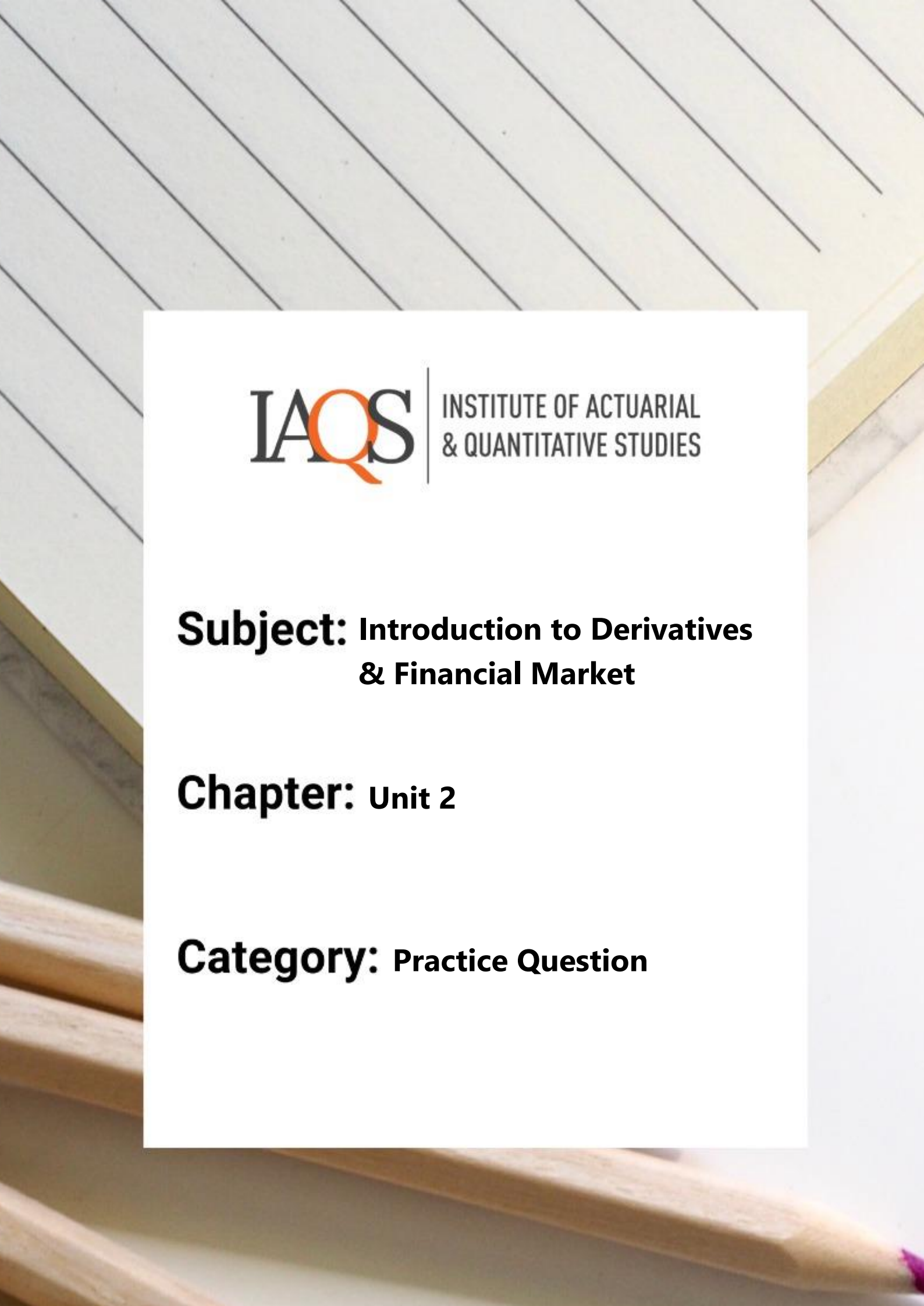

IAQS | INSTITUTE OF ACTUARIAL & QUANTITATIVE STUDIES

Subject: Introduction to Derivatives & Financial Market

Chapter: Unit 2

Category: Practice Question

Q 1)
What is the difference between a long forward position and a short forward position?

Q 2)
Explain carefully the difference between hedging, speculation, and arbitrage.

Q 3)
An investor enters into a short forward contract to sell 100,000 British pounds for US dollars at an exchange rate of 1.4000 US dollars per pound. How much does the investor gain or lose if the exchange rate at the end of the contract is
(a) 1.3900 and
(b) 1.4200?

Q 4)
What is the difference between the over-the-counter market and the exchange-traded market? What are the bid and offer quotes of a market maker in the over-the-counter market?

Q 5)
Suppose that a June put option to sell a share for $60 costs $4 and is held until June. Under what circumstances will the seller of the option (i.e., the party with the short position) make a profit? Under what circumstances will the option be exercised? Draw a diagram illustrating how the profit from a short position in the option depends on the stock price at maturity of the option.

Q 6)
A company knows that it is due to receive a certain amount of a foreign currency in 4 months. What type of option contract is appropriate for hedging?

Q 7)
On July 1, 2011, a company enters into a forward contract to buy 10 million Japanese yen on January 1, 2012. On September 1, 2011, it enters into a forward contract to sell 10 million Japanese yen on January 1, 2012. Describe the payoff from this strategy.

Q 8)
Explain why a futures contract can be used for either speculation or hedging.

Q 9)
A stock price is $29. An investor buys one call option contract on the stock with a strike price of $30 and sells a call option contract on the stock with a strike price of $32.50. The market prices of the options are $2.75 and $1.50, respectively. The options have the same maturity date. Describe the investor's position.

Q 10)
The price of gold is currently $1,000 per ounce. The forward price for delivery in 1 year is $1,200. An arbitrageur can borrow money at 10% per annum. What should the arbitrageur do? Assume that the cost of storing gold is zero and that gold provides no income.

Q 11)
Suppose that you enter into a short futures contract to sell July silver for $17.20 per ounce. The size of the contract is 5,000 ounces. The initial margin is $4,000, and the maintenance margin is $3,000. What change in the futures price will lead to a margin call? What happens if you do not meet the margin call?

Q 12)
On July 1, 2012, a Japanese company enters into a forward contract to buy $1 million with yen on January 1, 2013. On September 1, 2012, it enters into a forward contract to sell $1 million on January 1, 2013. Describe the profit or loss the company will make in yen as a function of the forward exchange rates on July 1, 2012, and September 1, 2012.

Q 13)
The forward price of the Swiss franc for delivery in 45 days is quoted as 1.1000. The futures price for a contract that will be delivered in 45 days is 0.9000. Explain these two quotes. Which is more favourable for an investor wanting to sell Swiss francs?

Q 14)
What does a stop order to sell at $2 mean? When might it be used? What does a limit order to sell at $2 mean? When might it be used?

Q 15)
What is the difference between the operation of the margin accounts administered by a clearing house and those administered by a broker?

Q 16)
What are the most important aspects of the design of a new futures contract?

Q 17)
Explain how margins protect investors against the possibility of default.

Q 18)
A trader buys two July futures contracts on orange juice. Each contract is for the delivery of 15,000 pounds. The current futures price is 160 cents per pound, the initial margin is $6,000 per contract, and the maintenance margin is $4,500 per contract. What price change would lead to a margin call? Under what circumstances could $2,000 be withdrawn from the margin account?

Q 19)
A cattle farmer expects to have 120,000 pounds of live cattle to sell in 3 months. The live cattle futures contract traded by the CME Group is for the delivery of 40,000 pounds of cattle. How can the farmer use the contract for hedging? From the farmer's viewpoint, what are the pros and cons of hedging?

Q 20)
Distinguish between the terms open interest and trading volume.

Q 21)
What is the difference between a local and a futures commission merchant?

Q 22)
Under what circumstances are (a) a short hedge and (b) a long hedge appropriate?

Q 23)
Explain what is meant by basis risk when futures contracts are used for hedging.

Q 24)
Give three reasons why the treasurer of a company might not hedge the company's exposure to a particular risk.

Q 25)
Suppose that the standard deviation of quarterly changes in the prices of a commodity is $0.65, the standard deviation of quarterly changes in a futures price on the commodity is $0.81, and the coefficient of correlation between the two changes is 0.8. What is the optimal hedge ratio for a 3-month contract? What does it mean?

Q 26)
A futures contract is used for hedging. Explain why the daily settlement of the contract can give rise to cash-flow problems.

Q 27)
The expected return on the S&P 500 is 12% and the risk-free rate is 5%. What is the expected return on an investment with a beta of (a) 0.2, (b) 0.5, and (c) 1.4?

Q 28)
Explain what is meant by a perfect hedge. Does a perfect hedge always lead to a better outcome than an imperfect hedge? Explain your answer.

Q 29)
A portfolio manager has maintained an actively managed portfolio with a beta of 0.2. During the last year, the risk-free rate was 5% and equities performed very badly providing a return of _30%. The portfolio manager produced a return of _10% and claims that in the circumstances it was a good performance. Discuss this claim

Q 30)
An airline executive has argued: ''There is no point in our using oil futures. There is just as much chance that the price of oil in the future will be less than the futures price as there is that it will be greater than this price.'' Discuss the executive's viewpoint.

Q 31)
Does a perfect hedge always succeed in locking in the current spot price of an asset for a future transaction? Explain your answer.

Q 32)
Under what circumstances does a minimum variance hedge portfolio lead to no hedging at all?

Q 33)
Explain what happens when an investor shorts a certain share.

Q 34)
What is the difference between the forward price and the value of a forward contract?

Q 35)
Suppose that you enter into a 6-month forward contract on a non-dividend-paying stock when the stock price is $30 and the risk-free interest rate (with continuous compounding) is 12% per annum. What is the forward price?

Q 36)
Explain carefully the meaning of the terms convenience yield and cost of carry. What is the relationship between futures price, spot price, convenience yield, and cost of carry?

Q 37)
The 2-month interest rates in Switzerland and the United States are, respectively, 2% and 5% per annum with continuous compounding. The spot price of the Swiss franc is $0.8000. The futures price for a contract deliverable in 2 months is $0.8100. What arbitrage opportunities does this create?

Q 38)
The risk-free rate of interest is 7% per annum with continuous compounding, and the dividend yield on a stock index is 3.2% per annum. The current value of the index is 150. What is the 6-month futures price?

Q 39)
The spot price of silver is $15 per ounce. The storage costs are $0.24 per ounce per year payable quarterly in advance. Assuming that interest rates are 10% per annum for all maturities, calculate the futures price of silver for delivery in 9 months.

Q 40)
When a known future cash outflow in a foreign currency is hedged by a company using a forward contract, there is no foreign exchange risk. When it is hedged using futures contracts, the daily settlement process does leave the company exposed to some risk. Explain the nature of this risk. In particular, consider whether the company is better off using a futures contract or a forward contract when:
(a) The value of the foreign currency falls rapidly during the life of the contract.
(b) The value of the foreign currency rises rapidly during the life of the contract.
(c) The value of the foreign currency first rises and then falls back to its initial value.
(d) The value of the foreign currency first falls and then rises back to its initial value.
Assume that the forward price equals the futures price.

Q 41)
Explain why a foreign currency can be treated as an asset providing a known yield.

Q 42)
Is the futures price of a stock index greater than or less than the expected future value of the index? Explain your answer.