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Q.1 Suppose that USD-Sterling spot and forward exchange rates are as follows:

Spot	2.0080
90-day Forward	2.0056
180-day Forward	2.0018

What opportunities are open to an arbitrager in the following situations?

- A 180-day European Call option to buy GBP. 1 for $1.97 at premium of 2 cents.
- A 90-day European Put option to sell GBP. 1 for $2.04 at premium of 2 cents.

Note : Ignore the "time value of money" component

Q.2 On February 20 a Treasurer realizes that on July 17 his company will have to issue $ 5 million of commercial paper with a maturity of 180 days. If the paper were issued today, they would realize $ 4,820,000 against a redeemable value of $ 5 million in 180 days' time. The September Eurodollar futures price is quoted as 92.00 for a contract size of $980,000. How should the Treasurer hedge the company's exposure.

Q.3 Suppose that you enter into a six-month forward contract on a non-dividend-paying stock when the stock price is $30 and risk free interest rate (with continuous compounding) is 12% per annum. What is the forward price?

Q.4 A Stock Index currently stands at 350. The risk free interest rate is 8% per annum (continuous compounding) and the dividend yield on the index is 4% per annum. What should be the futures price for a four-month contract?

Q.5 The 350-day LIBOR rate is 3% with continuous compounding and forward rate calculated from a Eurodollar futures contract that matures in 350 days is 3.20% with continuous compounding. Estimate the 440-day zero rate.

Q.6 A corporate treasurer tells you that he has just negotiated a five-year loan at a competitive fixed rate of 5.2%. He explains that he achieved the 5.2% rate by borrowing at six-month LIBOR plus 150 basis points and swapping LIBOR for 3.7%. He thinks that this was only possible because of his company's good credit rating. What has the Treasurer over looked?

Q.7 An investor sells a European call option with strike price of K and maturity T and buys a put with the same strike price and maturity. Describe the investor's position?

Q.8 Explain the difference between hedging speculation and arbitrage, and illustrate your answer with one example of each.

Q.9 Distinguish between the terms "open interest" and "trading volume".

Q.10 Explain how margins protect investors against the possibility of a default with respect to Futures market.

Q.11 Show that if the futures price of a commodity is greater than the spot price during the delivery period, there is an arbitrage opportunity. Does an arbitrage opportunity exist if the futures price is less

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than the spot price ? Explain your answer.
(10)

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