

Name (and CNet ID please): \_\_\_\_\_

**INSTRUCTIONS: No books, notes or calculators allowed during the exam. Please indicate your answers on these pages by circling or otherwise clearly marking your choice.**

**You do not need to show your work. If you need to do calculations, please use a separate blue book.**

1) EURGBP moves from 0.8350 to 0.8164. Which one of the following is true?

- a) GBP is stronger versus EUR
- b) EUR is stronger versus GBP
- c) GBP and EUR have not changed in value relative to each other
- d) Not enough information to determine whether a), b) or c) are true

2) USDCHF is 1.1304 and then moves one big figure with CHF weakening. Where is USDCHF now?

- a) 1.1404
- b) 1.1305
- c) 1.1303
- d) 1.1204

3) If EURCHF is 1.2100, how many EUR can CHF 1,000,000 buy?

- a) 82,644
- b) 121,000
- c) 826,446
- d) 1,210,000

4) A CAD-based car manufacturing company sources parts from the United States. What is the company's immediate FX exposure, and what type of hedge would reduce the company's FX risk?

- a) Long USDCAD, and an FX forward to buy USD / sell CAD
- b) Long USDCAD, and an FX forward to sell USD / buy CAD
- c) Short USDCAD, and an FX forward to sell USD / buy CAD
- d) Short USDCAD, and an FX forward to buy USD / sell CAD

5) A USD-based trader has the following position, selling GBP 100 million versus JPY at 80.00. The current spot GBPJPY rate is 70.00, and current spot GBPUSD is 1.50. What is the market-to-market value of the trader's position (in USD, rounded to the nearest 100,000)?

- a) 1,000 million
- b) 21.4 million
- c) 14.3 million
- d) 9.5 million

6) Assume USDCHF is 0.9200 and USDJPY is 92.00, what is the implied CHFJPY cross rate?

- a) 100.00
- b) 92.92
- c) 84.64
- d) 0.0100

7) Find the all-in 1-year forward rate assuming the following: EURUSD spot is 1.2900, the EUR deposit rate is 2.00%, the USD deposit rate is 1.00% and there are 360 days between spot and the forward date

- a) 1.3153
- b) 1.3028
- c) 1.2774
- d) 1.2652

8) A trader executes a EURCHF spot transaction at 1.2200, buying EUR, and soon after that swaps the position to the 1-month date. If the forward point quote (with bid-ask) is -24/-12 what is the trader's all-in forward rate?

- a) 1.2188
- b) 1.2176
- c) 1.2080
- d) 1.1960

9) If CNY deposit rates are higher than USD deposit rates for a particular maturity, then must the USDCNY non-deliverable forward rate for the same maturity be higher than the USDCNY spot rate?

- a) Yes, lower USD deposit rates imply the USD is stronger on a forward basis
- b) No, lower USD deposit rates imply the USD is weaker on a forward basis
- c) No, non-deliverable forward rates can violate the covered interest rate parity formula
- d) Yes, non-deliverable forward rates are always above spot rates

10) If the EURUSD spot rate is 1.4000, EUR deposit rates are 0.60% and USD deposit rates 0.10%, what might the 1 year forward points in EURUSD be?

- a) -705
- b) -70.5
- c) 70.5
- d) 705

11) Let  $S$  be the spot rate,  $rd$  the domestic deposit rate,  $rf$  the foreign deposit rate, and  $T$  time to maturity. Which of the following is a formula for forward points?

- a)  $S * (1 + rf * T) / (1 + rd * T) * 10,000$
- b)  $S * (1 + rd * T) / (1 + rf * T) * 10,000$
- c)  $S * \{ (1 + rf * T) / (1 + rd * T) - 1 \} * 10,000$
- d)  $S * \{ (1 + rd * T) / (1 + rf * T) - 1 \} * 10,000$

12) Why does the derivation of the Garman-Kohlhagen PDE for foreign exchange differ from the derivation of the Black-Scholes PDE for a non-dividend-paying stock?

- a) Foreign exchange positions must be present valued using the foreign interest rate
- b) Foreign interest rates and spot FX rates are correlated, so adjustment terms must be introduced
- c) The FX spot rate is not a traded asset, so no riskless portfolio can be constructed
- d) A foreign currency position must be carried using a foreign risk free bond

13) Let the EURUSD spot rate be 1.3000 and the 1-year forward rate 1.2900. If the strike of a EUR call USD put is 1.4190 and its implied volatility is 10% then which of the following might be its premium (expressed as USD pips)

- a) 0.0123
- b) 0.0516
- c) 0.1290
- d) 0.1410

14) Assume USDCAD spot is 1.1150, the 1-year forward is 1.1200 and implied volatility is 10%. Which of the following could be the delta of a 1-year 1.2310 USD call CAD put?

- a) 0.50
- b) 0.33
- c) 0.17
- d) 0.05

15) Let the EURUSD spot rate be 1.3000 and the forward rate 1.2800. If a EUR put USD call has a strike of 1.2000 and a premium of 0.0390 in USD pips, then which of the following might be its premium in EUR%

- a) 3.00%
- b) 3.05%
- c) 3.25%
- d) 3.90%

16) A USD-based trader buys a USD put JPY call with a strike of 90.00 and notional of USD 100 million. The option premium is 0.95 in JPY pips, the spot rate is 95.00 and the option delta is -0.20 (this is an unadjusted delta, from the Black-Scholes formula with JPY as the domestic currency.)

What spot hedge should the USD-based trader execute to delta hedge the option position?

- a) Buy USD 19.0 million versus JPY
- b) Buy USD 20.0 million versus JPY
- c) Buy USD 21.0 million versus JPY
- d) Buy USD 21.1 million versus JPY

17) The price of an AUD put USD call struck at 0.9500 is 0.0200 USD pips. If the spot rate is 1.0200 and the forward rate is 0.9900, then what is the price of an AUD call USD put struck at 0.9500? (Assume USD deposit rates are zero.)

- a) 0.0200
- b) 0.0500
- c) 0.0600
- d) 0.0900

18) The EURGBP spot rate is 0.8400. The one week outright is 0.8420 and the one month outright is 0.8480. Which of these options have the highest vega?

- a) 0.7480 EUR call expiring in one month
- b) 0.8480 EUR call expiring in one month
- c) 0.7400 EUR call expiring in one hour
- d) 0.8400 EUR call expiring in one hour

19) A trader buys a 25 delta AUDUSD butterfly where the notional amounts of all legs are equal. In other words, the trader buys both a 25 delta call and put in equal notionals, and sells at-the-money (delta neutral strike) call and put also the same notional. Regarding the risk position of the total strategy, is it:

- a) Both vega neutral and delta neutral
- b) Neither vega neutral nor delta neutral
- c) Delta neutral but long vega
- d) Delta neutral but short vega

20) If EURUSD risk reversals are strongly negative (puts are favored over calls), then which of the following is true of the market implied EURUSD distribution?

- a) The distribution has fat tails relative to a lognormal distribution
- b) The distribution is skewed to the downside
- c) The mean of the distribution is lower
- d) Both b) and c) are true