

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

**INSTRUCTIONS:**

- Calculators are allowed.
- Please no books or notes, no laptops or electronic devices that can store text.
- Please turn your phone off (and any electronics other than a calculator) and do not turn it back on until you have submitted your exam.

**Please indicate your answers on the final exam sheets**

- You do not need to show your work.
- Use a blue book if you want to write out any calculations, but do not return the blue book;
- We will not grade or consider any written calculations, only the final result (which you should record directly on the final exam pages).



- 5) Find the all-in 4-month forward rate for AUDUSD, ignoring bid/ask and assuming the following:

AUDUSD spot        0.8370  
AUD deposit rate    2.10%  
USD deposit rate    0.20%  
121 days between spot and the forward date  
(AUD deposit rates follow ACT/365)

- 6) A trader (market-maker) executes a USDCHF forward contract, buying CHF. If the spot rate (including bid/offer) is 0.9720/0.9725 and the forward point quote (also with bid/offer) is -21/-15, then what is the trader's all-in forward rate?

- 7) Assume there are 91 days between spot and the 3-month forward date, and assume the following rates (with bid offer listed):

EURUSD                1.0550 / 1.0555  
3mo EUD deposit    0.05% / 0.15%  
3mo USD deposit    0.35% / 0.45%  
What is the lower arbitrage limit for 3 month EURUSD forward points?  
(EUR deposit rates follow ACT/360)

- 8) Calculate the NOK interest rates implied by the following forward rates ("implied yield"), ignoring bid/offer.

USDNOK spot	7.6090
USDNOK 6mo fwd	7.7085
6mo USD deposit	0.25%
182 days between spot and the forward date	
(NOK deposit rates follow ACT/360)	

- 9) If the 3-month NDF rate for USDBRL is 3.0500 higher than the spot USDBRL rate of 3.0100, then what do we know about domestic BRL deposit rates relative to USD deposit rates? **(Indicate your answer by circling one of the following choices)**

- a) BRL deposit rates must be lower since the USD is stronger on a forward basis
- b) BRL deposit rates must be higher since the USD is stronger on a forward basis
- c) No information, non-deliverable forward rates give no information about BRL deposit rates
- d) No information, non-deliverable forward rates are always above spot rates

- 10) Given the information below, calculate the FX swap points for a USDNOK position maturing in 3 months that needs to be rolled out to the 6 month date, ignoring bid/offer.

USDNOK spot	7.6130
3mo USD deposit	0.25%
6mo USD deposit	0.35%
3mo NOK deposit	2.65%
6mo NOK deposit	2.85%
92 days between spot and the 3-month forward date	
183 days between spot and the 6-month forward date	

- 11) Let the EURUSD spot rate be 1.0750 and the forward rate be 1.0810. If a EUR call USD put has a strike of 1.1000 and a premium of 0.0270 in USD pips, then what is the premium in percent of EUR?
- 12) Consider a EUR put /USD call and a EUR call / USD put with the same maturity, say in 3-months. Further assume both options have strike = forward. What do we know about the values and deltas of these two options? (Hint: consider put-call parity.) **(Indicate your answer by circling one of the following choices)**
- a) Values are equal and deltas are equal
  - b) Values are equal and deltas have opposite signs and are equal in absolute values
  - c) Values are equal and call delta is greater than put delta in absolute value
  - d) Values are equal and call delta is less than put delta in absolute value
  - e) Neither values nor deltas are equal
- 13) The AUDUSD one week outright is 1.02. Which of these one week options has the smallest delta in absolute value? **(Indicate your answer by circling one of the following choices)**
- a) 1.02 AUD put
  - b) 1.20 AUD put
  - c) 1.20 AUD call
  - d) 1.00 AUD call
- 14) The EURGBP spot rate is 0.8700. The one week outright is 0.8720 and the one month outright is 0.8780. Which of these options have the smallest gamma? **(Indicate your answer by circling one of the following choices)**
- a) 0.7700 EUR call expiring in one month
  - b) 0.8780 EUR call expiring in one month
  - c) 0.7780 EUR call expiring in one hour
  - d) 0.8700 EUR call expiring in one hour