NANYANG TECHNOLOGICAL UNIVERSITY

SEMESTER 2 EXAMINATION 2015-2016

BC3402: Financial Service Processes and Analytics

April/ May 2016   Time Allowed: 2 hours

INSTRUCTIONS

1   This paper contains **THREE (3)** questions and comprises **FOUR (4)** pages.

2   Answer all **THREE (3)** questions

3   This is an **open-book** examination.

4   The number of marks allocated is shown at the end of each question.

5   Begin your answer to each question on a separate page of the answer book.

6   Answers will be graded for content and appropriate presentation.

Question 1

Read the following excerpt and answer the questions below.

The Australian Financial Markets Association (AFMA), the leading industry association promoting efficiency, integrity and professionalism in Australia's financial markets, has announced plans for Australia to move from a T+3 to T+2 (trade date plus two days) settlement cycle for fixed income products.

The change, which will come into force on March 7th, 2016, will mean that the date on which ownership of the security is actually transferred and money is exchanged between buyer and seller will take place two days after the transaction is executed.

It is important to note that only secondary market products are included in this change and that origination settlement cycles and conventions remain the same. Secondary market products include Commonwealth treasury bonds and semi government bonds which are not near maturing; corporate bonds and commonwealth inflation bonds.

Question 1 (continued)

Required

a) What do you think are the advantages and challenges for this new initiative for T+2 settlement in fixed income securities?

(20 marks)

b) Based on your understanding of the trade cycle and the technologies required to support it, why do you think fixed income security is a good candidate for T+2 settlement?

(15 marks)

(TOTAL: 35 marks)

Question 2

Alex is a trader working in a sell-side brokerage. On the evening of 15 Feb 2016, he received an analyst report suggesting that the share price of KBL Corporation is undervalued and is believed to trend upwards to $100.00 by the end of the trading week (19 Feb 2015). At the same time, he was given the instruction to buy 300,000 units of KBL shares on the following trading day. The positive price trend is also believed to last for the entire week. The closing price of KBL on 15 Feb 2016 is $90.00.

The 30-day average hourly trading volume for KBL shares are as shown below:

Historical Trade Volume (Hourly)

AM	Volume (in thousands)	PM	Volume (in thousands)
9am to 10am	150	12pm to 1pm	50
10am to 11am	100	1pm to 2pm	50
11am to 12pm	50	2pm to 3pm	100
		3pm to 4pm	150
		4pm to 5pm	250

Additional Information:

- Per 60-minute stock price volatility (standard deviation) = $0.20/share
- Per 60-minute stock volume volatility (standard deviation) = 2500 shares

Note: Question 2 continue on page 3

Question 2 (continued)

Required:

a) Alex decided to use a VWAP strategy for this trade. Using this strategy, he will execute the trade over the entire day with individual trading periods lasting 1 hour (i.e. VWAP execution over eight 1-hour periods). Compute the expected VWAP (price) he will achieve using this strategy for the *last time period* (4pm to 5pm) and compute a likely range of prices (within 1 standard deviation) he will achieve as a result of this strategy for this time period.

(10 marks)

b) Do you think the expected VWAP (price) computed in 2a) is a good estimate? Why or why not?

(10 marks)

c) The proposed VWAP strategy is not the best execution strategy here given the underlying trading environment. How will you suggest modifying this strategy and why? Provide details of the modification.

(10 marks)

(TOTAL: 30 marks)

Question 3

On 17 March 2014, Singapore launched a new electronic funds transfer service called FAST (Fast And Secure Transfers). FAST is an electronic funds transfer service that allows a secure and almost immediate transfer of Singapore Dollar (SGD) funds between accounts held in the 19 participating banks in Singapore. Prior to FAST, an interbank funds transfer can take up to 3 working days.

FAST is available 24 hours a day, 7 days a week. Customers of the 19 participating banks can make interbank funds transfers of up to S$50,000 per transaction, subject to their daily or monthly withdrawal limits. Customers can find out the status of their transfers by accessing their bank accounts via internet banking, or through notification services provided by their participating banks.

– Source: http://www.moneysense.gov.sg/

Required

a) Singapore has another electronic payment system called MAS Electronic Payment System (MEPS+) which will also facilitate instantaneous transfer of funds. Why do you think there is still a need for having the FAST transfer service when we already have the MEPS+ system in place?

(15 marks)

b) To build a payment system which will facilitate almost real-time transfer of funds (like FAST) is not a simple task. What do you think are the necessary components required for such a system to work and propose an underlying architecture which will support a payment system like FAST. You may draw a diagram to better illustrate the payment architecture that is required.

(20 marks)

(TOTAL: 35 marks)

- END OF PAPER -

BC3402 FINANCIAL SERVICE PROCESSES AND ANALYTICS

Please read the following instructions carefully:

1. **Please do not turn over the question paper until you are told to do so. Disciplinary action may be taken against you if you do so.**

2. You are not allowed to leave the examination hall unless accompanied by an invigilator. You may raise your hand if you need to communicate with the invigilator.

3. Please write your Matriculation Number on the front of the answer book.

4. Please indicate clearly in the answer book (at the appropriate place) if you are continuing the answer to a question elsewhere in the book.