

※ 考生請注意：本試題不可使用計算機，請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

Part A.

A 1. Multiple choice questions. Choose the alternative that best completes the statement or answers the question. 24%

(1) What is a miner in blockchain?

- a. A type of blockchain
- b. An algorithm that predicts the next part of the chain
- c. A person doing calculations to verify a transaction
- d. Computers that validate and process blockchain transactions

(2) What is a big hurdle enterprises need to overcome when embracing big data?

- a. Infrastructure requirements
- b. Cyber security risks
- c. Cloud integration
- d. Lack of digital skills

(3) This is an arrangement in which a company outsources some or all of its customer relationship management functions to an application service provider (ASP).

- a. spend management
- b. supplier relationship management
- c. hosted CRM
- d. Customer Information Control System
- e. online transaction processing

(4) What types of business intelligence (BI) applications work best for mobile BI?

- a. Dashboards and standard reports
- b. Ad hoc querying
- c. Geographic mapping
- d. Operations that require right-clicking

(5) Which of the following statement about aggregation in UML is not true?

- a. show possible relations between instances of classes
- b. may have multiplicities to indicate to how many instances of a class the object is associated to....
- c. have to be identified by a unique association name
- d. may have navigable and non-navigable association directions.

(6) This is a program that allows the computer to simulate conversation with a human being. "Eliza" and "Parry" are early examples of programs that can at least temporarily fool a real human being into thinking they are talking to another person.

- a. Speech Application Program Interface
- b. chatterbot
- c. speech recognition
- d. Amiga

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(7) If a transmission is good, this is what happens when a mobile or portable cellular subscriber passes from one cell into another and the network has to switch coverage responsibility from one base station to another.

- a. handshake
- b. seamless interface
- c. cross-bar switch
- d. analog-to-digital conversion
- e. handoff

(8) This method of online analytical processing stores data in both a relational and a multidimensional database.

- a) HOLAP
- b) ROLAP
- c) MOLAP
- d) OLAP

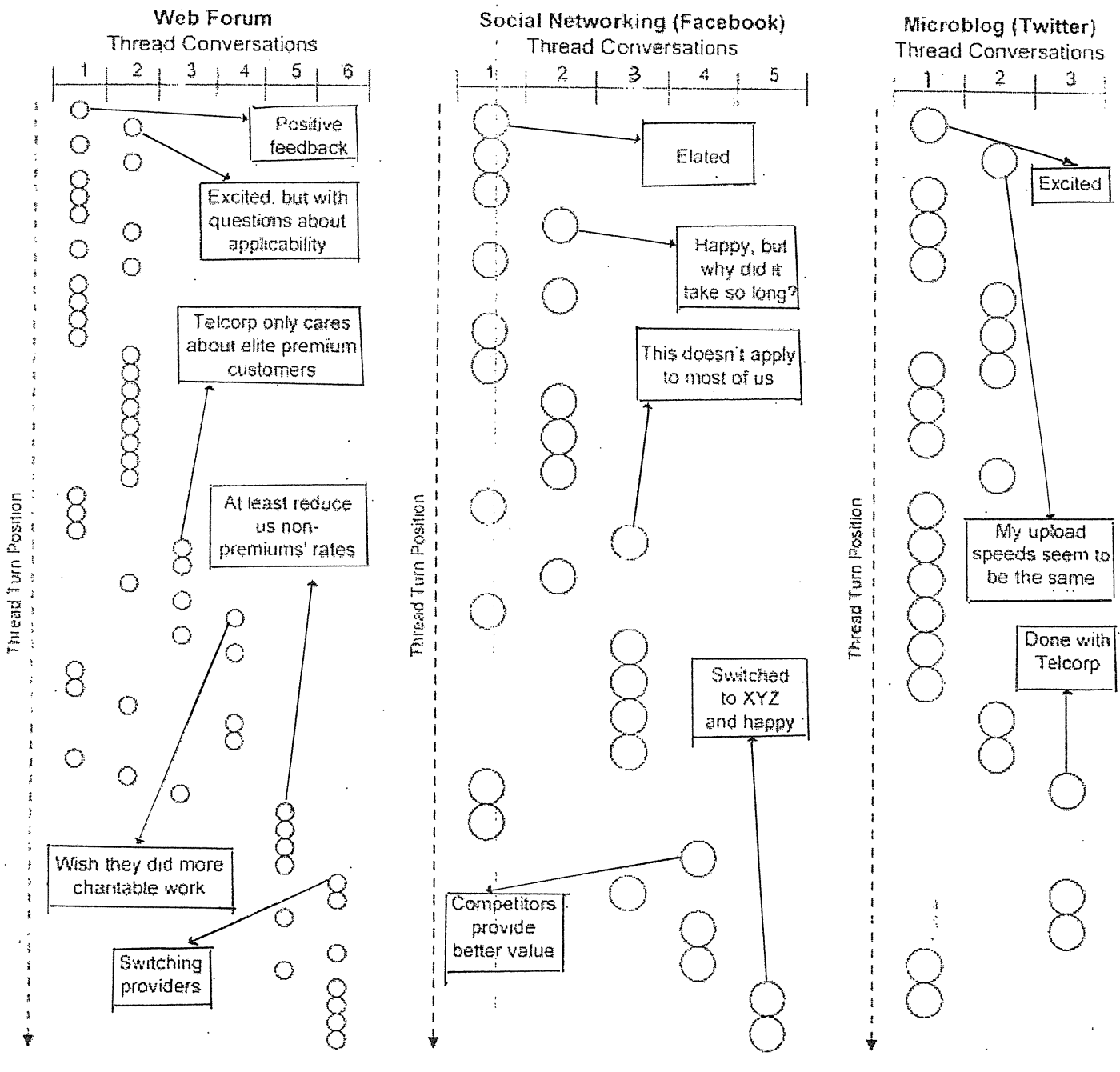
A2. Essay Questions

- (1) Distinguish bullwhip and ripple effects in supply chain by illustrating examples. 5%
- (2) What is the difference between data warehouse and data lake? 5%
- (3) What is the crowdfunding? How does it work? Illustrate one popular representative of crowdfunding platform and describe its business model. 6%
- (4) An email database is a database storing a large number of email messages. It can be viewed as a semistructured database containing mainly text data. Discuss the following. 10%
 - (a) How can such an email database be structured so as to facilitate multidimensional search, such as by sender, by receiver, by subject, and by time?(3%)
 - (b) What can be mined from such an email database?(3%)
 - (c) Suppose you have roughly classified a set of your previous email messages as junk, unimportant, normal, or important. Describe how a data mining system may take this as the training set to automatically classify new email messages or unclassified ones.(4%)

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B1- Why or why not to outsource IS services for an enterprise? (8%)

B2- Please fill in the blanks (12%) The following figure shows three initiative-related discussion threads taken from a web forum, Facebook, and Twitter, respectively. In each thread, circles denote individual messages. The vertical axes indicate thread turns, and the horizontal axes indicate conversations within the thread (with each column of circles signifying the messages in the same conversation). The arrows and boxes indicate the general topic of that particular conversation. As depicted in the figure, the (1) thread example encompassed six different conversations over a span of only 53 messages. The Facebook and Twitter threads had (2) and (3) conversations, respectively. The initial conversations, which accounted for the majority of messages, were mostly (4) (positive / negative) expressions about the initiative. Source: Abbasi, A., Zhou, Y., Deng, S., & Zhang, P. (2018). Text analytics to support sense-making in social media: A language-action perspective. *MIS Quarterly*, 42(2), 427-464. (page 432)



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B3- Please answer the following questions about ransomware. (30%)

- (1) What are the file extensions of ransomware? (5%)
- (2) How do cybercriminals usually do with your digital devices? (5%)
- (3) In which currency do those cybercriminals usually want their ransom? (5%)
- (4) How do those cybercriminals react to No More Ransom site launched by some security companies and law enforcement that provides free decryptors and useful articles? (5%)
- (5) How to prevent ransomware? (5%)
- (6) Please list some worst types of ransomware attacks? (5%)