UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER I
SESSION 2018/2019

COURSE NAME	:	REQUIREMENT ANALYSIS & SPECIFICATION
COURSE CODE	:	BIE 30603
PROGRAMME CODE	:	BIP
EXAMINATION DATE	:	DISEMBER 2018 / JANUARI 2019
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

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THIS QUESTION PAPER CONSISTS OF **SEVEN (7)** PAGES

SECTION A

Instruction: Choose the BEST answer for each of the following questions.

Q1   Which **TWO (2)** of the following types of documentation are best suited to document the system context?

      i.   Textual description (Continuous Context).
      ii.   Data Flow Diagram
      iii.   Stakeholder list
      iv.   Use Case Diagram

      A.   i, ii
      B.   i, iii
      C.   ii, iv
      D.   i, iv

      (2 marks)

Q2   To set up a suitable basis for further development activities, a requirements document is checked for certain quality criteria. Which **TWO (2)** of the following qualities belong to the quality aspect "content"?

      i. Completeness
      ii. Understandability
      iii. Unambiguity
      iv. Consistency
      v. Size

      A.   i , ii
      B.   ii, iv
      C.   i, iv
      D.   iii,v

      (2 marks)

Q3   The following principles should be adhered to in inspection, **EXCEPT**_____.

      A.   strict compliance to the predetermined inspection process
      B.   strict separation of the roles of the moderator and the reader
      C.   individual preparation of the participants
      D.   integration of the identification and correction of errors

      (2 marks)

Q4   For a navigation system to be applied internationally, a stakeholder demands a female voice only for the voice output. Another stakeholder considers this discriminatory and demands a male voice in addition. Which of the following types of conflicts describes this conflict **BEST**?

        A.   Relationship conflict
        B.   Interest conflict
        C.   Structural conflict
        D.   Value conflict

                                                          (2 marks)

Q5   All of the following statements are **TRUE** about the different views applied in requirements management which only show parts of the requirements instead of displaying all requirements and attributes, **EXCEPT**_____.

        A.   not the whole document has to be read for a particular perspective
        B.   to support the review process, requirements which belong together are grouped
        C.   requirements for which certain stakeholders should not have reading access can be made invisible
        D.   it can be assured that several people can work on one specification at the same time.

                                                          (2 marks)

Q6   The traceability of requirements aims at several goals. Indicate the **FALSE** statement.

        A.   Traceability facilitates an impact analysis
        B.   Traceability facilitates the verification of implementation
        C.   Traceability facilitates exports from a requirements management tool.
        D.   Traceability facilitates finding a requirements source

                                                          (2 marks)

Q7 Additional information on requirements is managed using attributes. An example of such additional information is a unique identifier. Which of the statements on the unique identifiers are **FALSE**?

"Unique identifiers are helpful..."

A. for estimating the overall size of a spesification.
B. for having an unambiguous basis for communication.
C. for establishing references to other requirements.
D. for establishing traceability to other development artifacts.

(2 marks)

Q8 As a requirements engineer for a company, you need to choose a tool for requirements management. In this context, which of the following statements are **TRUE**?

i. The tool has to support the artifacts demanded in the requirements engineering process applied.
ii. The choice of a tool should be left to the users of the tool
iii. The choice of a tool is substantially determined by the flexibillity of the definable attributes.
iv. The choice of a tool is also influenced by the tool chain (e.g. configuration management) the tool is to be applied in.

A. i, ii
B. i, iii
C. i, iv
D. ii, iii

(2 marks)

9 In a project, five stakeholders disagree on an important requirement. Two different options have been discussed and no common solution could be found so far. Which **TWO (2)** of the following techniques are most suitable in this context to resolve the conflict?

i. Agreement
ii. Compromise
iii. Voting
iv. Definition of variants
v. Overruling
vi. Plus-minus-interesting

A.   i, ii
B.   ii, iii
C.   iii, iv
D.   iii, v

(2 marks)

Q10   Which of the following software process model is **NOT** providing a widely used standardized document structure?

A.   Rational Unified Process (RUP)
B.   ISO/ IEC/ IEEE standard 29148:2011
C.   SCRUM
D.   V-Model

(2 marks)

SECTION B

Q11   (a)   Define the term requirements management.

(2 marks)

(b)   Explain **THREE (3)** activities in requirements management.

(6 marks)

(c)   List **FOUR(4)** techniques that can be used for requirements prioritisation.

(4 marks)

(d)   Compare the techniques listed in Q11(c)

(8 marks)

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Q12   Questions **Q12(a)** and **Q12(b)** are based on **Figure Q12.**

As the Vice-President of Development for BC Realtors you are asked to develop a new home realty system. The company would like to create an e-development solution that will replace the home listing catalogs that are printed on a monthly basis, and to some extent, replace the need to generate sales literature for every home that is listed with BC Realtors. The new system will allow prospective buyers to search the home database for current listings and to initiate the loan process. Buyers will also be able to communicate with the listing agent to request additional information, a home walkthrough, and so on. Realtors will be able to list their properties on the BC Realtor system for a nominal fee. A prospective buyer will be able to log on to the system and set up a personal profile. This profile will allow the buyer to enter a set of personal preferences and search requirements. Buyers will also be able to bookmark properties to the personal planner for easy reference the next time they log on. After a customer has logged on to the system they may choose to search for a home, find a Realtor, or apply for a mortgage loan. The customer should be able to search for a home in a geographic area by city, zip code, or the Multiple Listing Service (MLS) number. The buyer should be able to further narrow their search through a series of filter criteria until they find a number of homes they are interested in. The buyer should be able to view a picture of the home and receive a full text description on all the amenities and features that the home has to offer. Finally, if the buyer is interested in receiving more information on the home, the buyer will be able to send an e-mail to the listing broker. BC Realtors has recently invested in a new mail server, and this server should be used to send e-mails. The prospective buyer has the option to apply for a mortgage loan using the Home Realty System. BC Realtors has an existing Loan System that communicates with a number of partner lenders to gain loan pre-qualification approvals. This system should continue to be used for sending loan requests to potential lenders. The Home Realty System will ask the prospective buyer a series of questions about their current financial standing. After the customer has answered all questions, the system will send the data to the Loan System and receive a list of possible offers for a loan. If the customer chooses to select one of the pre-qualification offers, the system will inform the customer that a credit report must be generated. BC Realtors subscribes to a Credit Reporting service, and the existing interface to this system should be used to provide this service. A prospective buyer may request information on any broker that is listing property with the Home Realty System. The buyer should be allowed to view the broker's personal profile that may contain any type of information that the broker enters and also a summary of all the properties that the broker currently has listed. Realtors must be able to access the on-line system to modify their personal profiles that are displayed to buyers. They will also need to create a new on-line listing for properties that they represent.

(Rational university, 2001)

Figure Q12

(a)   Develop a use case diagram.

(12 marks)

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(b)   Choose one use case from **Q12 (a),** to

    (i)   identify analysis classes involved.

(8 marks)

    (ii)   develop a sequence diagram.

(10 marks)

    (iii)   develop a class diagram by considering the following relationships between the classes (if there any).
- Association
- Aggregation and Composition
- Generalisation

(10 marks)

- END OF QUESTION -

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