UNIVERSITY OF BOLTON

RAK ACADEMIC CENTRE

BSC (HONS) COMPUTING

SEMESTER TWO EXAMINATION 2018/2019

SYSTEM ANALYSIS AND DESIGN

MODULE NO: CPU5006

Date: Thursday 23rd May 2019   Time: 1.00pm to 3.00pm.

INSTRUCTIONS TO CANDIDATES: There are FOUR questions on this paper

                                     Answer ALL FOUR questions

                                     All questions carry equal marks

                                     Marks for parts of questions are shown in brackets.

                                     You will need to answer question 3 and 4 based on the information included in the scenario (Appendix A)

CANDIDATES REQUIRE: Scenario (attached)

University of Bolton
RAK Academic Centre
BSc (Hons) Computing
Semester 2 Examination 2018/2019
System Analysis & Design
Module No. CPU5006

Question 1

a. With the use of a diagram, briefly explain the Agile methodology along with its advantages and disadvantages.

(8 marks)

b. What are the different phases of SDLC?

(8 marks)

c. CASE tools are used in various activities of SDLC. Identify the SDLC methodology in which, CASE tools play an important role. Provide any one CASE Tool example. Evaluate its advantages to SDLC.

(9 marks)

Total 25 marks

Question 2

a. What do the acronyms ROI and BEP stand for? Identify which type of Feasibility Study they help assess. Explain with example how the type of Feasibility identified is assessed.

(8 marks)

b. Explain the importance of Maintenance phase of SDLC. Describe the different types of maintenance.

(7 marks)

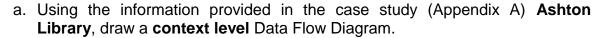c. Briefly explain with examples the rules to be followed while developing Interview Questions.

(10 marks)

Total 25 marks

Please turn the page

University of Bolton
RAK Academic Centre
BSc (Hons) Computing
Semester 2 Examination 2018/2019
System Analysis & Design
Module No. CPU5006

Question 3

    a. Using the information provided in the case study (Appendix A) **Ashton Library**, draw a **context level** Data Flow Diagram.

(10 marks)

    b. Using the information provided in the context diagram (in question 3a above) draw a **Level 1 Data Flow Diagram**.

(15 marks)

Total 25 marks

Question 4

    a. Identify the entities present in the system described in the case study Ashton Library (*Appendix A*) and indicate the primary key for each entity.

(6 marks)

    b. Draw a Logical Data Structure based on the entities identified in question 4a.

(13 marks)

    c. Draw the Use Case Diagram for the system described in the case study Ashton Library (*Appendix A*).

(6 marks)

Total 25 marks

Please turn the page

University of Bolton
RAK Academic Centre
BSc (Hons) Computing
Semester 2 Examination 2018/2019
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Module No. CPU5006

APPENDIX A

Ashton Library

Ashton University is a University located in Al Hamra, Ras al Khaimah. It has a Library Department which catalogues Books, CDs, Magazines and Journals for students and staff. The Library is currently using Microsoft Excel sheets to maintain its data. The prospective member fills up a registration form. The Librarian processes the form and issues a library card (hereafter the prospect is a member). The member browses a catalogue and finds a loan item (Books, CDs, Magazines and Journals). The member borrows the loan item by giving his/her library card and the loan items to the Librarian. The Librarian records the borrowings and returns the loan items and library card to the borrower. At some future date, the borrower returns the loan items to the Library. The Librarian checks if the return date is exceeded. If the member has returned the loan item late then a fine is imposed on the member and asked to pay a fine at the rate of 5 AED per day for overdue days. The Librarian checks in the loan items. The member may also reserve a loan item. When the items become available then the requesting member is called on his mobile number and notified.

The Library has a Discussion Room. Members can book the room for isolated studying or meetings. The members interested to book the room need to first reserve the room by writing in Discussion Room Notebook the Date, Time and Duration required. Based on the availability, the Librarian gives the approval for use of the Discussion Room.

The Librarian maintains the catalogue. The Librarian gets a list of latest items from distributors during the month. At month end, the Librarian creates an order for the distributors. When items arrive the Librarian labels them and makes them available in the catalogue.

END OF QUESTIONS