NATIONAL SCHOOL OF BUSINESS MANAGEMENT
BSc. In Management Information Systems (Special) – 20.2/20.3
BSc. (Honours) in Software Engineering – 20.2/20.3
BSc. (Honours) in Computer Science – 20.2/20.3
BSc. (Honours) in Computer Networks – 20.2/20.3

Year 02 Semester 01 Examination
06th June 2022
SE201.3 – Systems Analysis and Design

Instructions to Candidates

1) **Answer all questions.**
2) Total Number of Pages 03.
3) Time allocated for the examination is five (05) hours (Including downloading and uploading time)
4) Weightage of Examination: 60% out of final grade
5) Download the paper, provide answers to the selected questions in a word document.
6) **Please upload the document with answers (Answer Script) to the submission link before the submission link expires.**
7) Answer script should be uploaded in PDF Format.
8) Under any circumstances E-mail submissions would not be taken into consideration for marking. Incomplete attempt would be counted as a MISSED ATTEMPT.
9) The Naming convention of the answer script – Module Code_Subject name_Index No.
10) You must adhere to the online examination guidelines when submitting the answer script to N-Learn.
11) Your answers will be subjected to Turnitin similarity check, hence, direct copying and pasting from internet sources, friend's answers etc. will be penalized.

Read the below case study and answer the questions given below.

<u>Business Case of BEAUTY soap manufacturer system</u>

BEAUTY is a soap manufacturer that sells its products to supermarkets, not to individuals. Therefore, these supermarkets are BEAUTY's customers and will have registered with BEAUTY by providing their shop details. Once these customers register with BEAUTY, they will receive a customer ID, username, and password. The supermarkets will typically place orders with BEAUTY over the internet after logging in to the system using this username and password. Once a customer has placed an order, the delivery will is scheduled within three weeks. Each customer order can consist of more than one type of soap, and the required quantity of each type is also recorded on order.

At the end of each week, a "production requests report" is produced by the sales department of BEAUTY and sent to its manufacturing department. So, the manufacturing department knows how many of each soap type it needs to make in the following week. This report is based on the quantity ordered by customers and the stock available for each type. The production requests report is also used to place purchase orders for raw materials from the suppliers so that all the necessary materials are available for the week's production. The procurement department handles all the purchase orders.

Each batch of soap produced has a unique code stamped on it. When a customer order is ready for dispatch, the code of the batch allocated to that order is recorded by the sales department to trace the items to a particular customer. Deliveries to customers can be arranged for complete or partial orders.

Information System of the BEAUTY uses separate files to store customer data, customer order data, stock data, raw material data, purchase orders to supplier data, and supplier data. BEAUTY takes orders only from local customers, but they deal with local and foreign suppliers.

Question 01   **(25 marks)**

Answer the following questions using only the details given in the case study.

1) Identify the external entities involved in the BEAUTY system.   (05 marks)
2) Produce the context level data flow diagram for BEAUTY.   (07 marks)
3) Identify three (03) high-level processes in BEAUTY.   (03 Marks)
4) Based on your answer for part 2, produce the Level 0 data flow diagram for BEAUTY.
                                                                             (10 marks)

Question 02   **(25 marks)**

1) Identify the object classes associated with the BEAUTY system.   (05 marks)
2) Identify two (02) attributes and two (02) methods for each object class.   (10 marks)
3) Incorporating answers of parts 1 and 2, create a class diagram for BEAUTY. It should display the multiplicities and different relationship types among classes (if any).
                                                                             (10 marks)

Question 03   **(25 marks)**
1) Identify the actors of the BEAUTY's information system.   (05 marks)
2) Based on the answer for part 1 and using the details given in the case study, create a use case diagram for BEAUTY.
                                                                             (20 marks)

Question 04   **(25 marks)**

Assume that you are the systems analyst working on the information systems development project of BEAUTY.

1) List the skills and knowledge you should have to perform your job role efficiently in this project?   (05 marks)
2) Briefly explain the main areas you must focus on to conduct a feasibility analysis for this project.   (08 marks)
3) Your team will be working on this project based on the Agile methodology. Explain how your team will perform the tasks according to this methodology. (You may use one agile method, e.g., SCRUM, Extreme Programming).   (12 marks)

END OF THE PAPER