

UNIVERSITY OF BOLTON

**SCHOOL OF BUSINESS AND CREATIVE
TECHNOLOGIES**

COMPUTING PATHWAYS

SEMESTER 2 EXAMINATIONS 2009/2010

SYSTEMS ANALYSIS AND DESIGN

MODULE NO: CST2511

Date: Thursday 3 June 2010

Time: 10.00 am – 12.00 pm

INSTRUCTIONS TO CANDIDATES:

There are FOUR questions on this paper.

Answer ALL questions.

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ANSWER ALL OF THE FOLLOWING QUESTIONS (The mark allocated is given at the end of each question)

Question 1

Identify and describe THREE methods of investigation (**NOT interviewing**) that can be used during the analysis stage for a local warehouse distribution centre. For **each method** your answer should include:

- Who is likely to be involved and why
- Who is likely to be the responsible person and why (**not project manager**)
- Advantages of the method
- Disadvantages (or limitations) of the method

[20 marks]

Question 2

After the initial analysis of an *non-computerised local* warehouse distribution system the following information was obtained.

“At the end of each day a manual stock-take is done by each department (e.g. small electrical, kitchen, household linen) and the details are entered into a folder. There are 10 departments which include

- Household Linen
- Storage
- Small electrical
- Large electrical
- Kitchen
- Luggage
- Decorating
- Garden
- Do-it-Yourself (DIY)
- Lighting

At the end of a full week (7 days) a full stock-take is undertaken to ascertain the number of items in stock in the warehouse. This is done by collating the information in each department's folder and entering it into a spreadsheet. A copy of the revised stock list is held in the Stock Control Department and a copy is sent to the Purchasing Department to ensure stock for items is ordered in good time. The Purchasing Department considers the amount of stock sold each day and passes the information to the Buying Department.

Question 2 continued over the page

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Question 2 continued

The Chief Buyer checks to see if any items have dropped below their re-order level. If any items have dropped below their reorder level, a Buyer adds the item and the required quantity – as a minimum the re-order level minus stock level, to a manual Requisition File containing a list of items to order.

The Buyer then checks which supplier has supplied the items before, using the Supplier Records Book. The Buyer then compares their prices against an on-line supplier catalogue to see if the items are cheaper elsewhere.

The supplier and the cost of item are then added to the particular requisition in the Requisition File. The Buyer is able to negotiate a reduced cost per item depending upon the quantity ordered. The overall order value is updated on the Requisition File.

Once all items have been processed, a unique manual Purchase Order Form is completed for each supplier identified in the Requisition File. The Order Date, Supplier Name and Address are added to the header of the Purchase Order. Each item required is then added to the Purchase Order with the Supplier's Item Code, Description, Supplier Cost and Required Quantity added for each item.

The Line Value is then calculated for each line and a total order value and the calculated values are written onto the Purchase Order.

The Purchase Orders are then placed within an envelope and posted to the respective suppliers. A copy of each order is then passed to Accounts.

On receipt of a Purchase Order, the Goods-Inwards Department receives the goods and a Goods-Inwards Note is produced. This updates the General Stock List, in the Stock Control Department. Information is then passed to the Accounts Department who will pay the Supplier. The Accounts Department will pay full and part orders to Suppliers.”

Using the information provided complete the following tasks:

- a) Draw a Context Diagram for the system outlined above. **[10 marks]**
- b) Outline the key features of the Context Diagram (a) level 1 and 2 Data Flow Diagrams. **[6 marks]**
- c) Using the information provided in the above analysis and the context diagram in (a) draw a Level 1 Data Flow Diagram containing at least FOUR processes. **[20 marks]**

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Question 3

Part A

Entity Descriptions for FOUR entities in the above system are included in Appendix A. Using these Entity Descriptions, together with the information provided in Question 2 above, draw a Logical Data Structure (LDS) for the four entities.

[16 marks]

Part B

With the aid of another LDS diagram, show how the entities defined in Part A can be restructured to minimise redundancy.

[10 marks]

Part C

Outline the advantages of using a Structured Analysis and Design methodology compared with using an in-house analysis and design methodology.

[4 marks]

Question 4

Part A

In relation to the Local Warehouse described in Question 2, explain why the Analyst should provide the management of the organisation with more than one possible choice of information handling as part of a computerised system. Also describe the factors that could influence the manager's when making their final choice.

[7 marks]

Part B

Compare the style of solution for tracking stock control at Departmental Level with the type of system to be used to pay Suppliers.

[7 marks]

END OF QUESTIONS

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ENTITY DESCRIPTION							
Entity Name Purchase Order					Date	01/02/2010	
Entity Reference 1.4					Author:	JD	
Entity Description					Volumetrics		
An order to supplier to supply items requested					Average		Maximum
Ref	Level	Attribute Name	Length	Format	Occurs	Key	Comment
1	1	Order No		N	1	✓	
2	1	Order Date		C	1		DDMMYYYY
3	1	Supplier Code		C	1		
4	1	Address		C	4		
5	1	Supplier Item Code		C	1 or more	✓	
6	1	Quantity Required		N	1 or more		
7		Cost per Item		N	1 or more		In £
8		Delivery Date		C	1 or more		DDMMYYYY
9		Line Item Cost		N	1 or more		In £
10		Total Line Cost		C	1		In £
11		Total VAT		C	1		In £
12		Total Order Cost		C	1		In £