

UNIVERSITY OF LONDON

FOR EXTERNAL STUDENTS (West)

B. Sc. Examination 2011

**BSC AND DIPLOMA IN COMPUTING AND
INFORMATION SYSTEMS**

**2910108 Information systems: The Foundation of
E-Business**

Duration: 3 hours

Date and time:

There are six questions on the paper. Please answer four questions. Full marks will be awarded for complete answers to four questions. Candidates must not attempt more than the required number of questions. Calculators are not allowed.

**THIS EXAMINATION PAPER MUST NOT BE REMOVED
FROM THE EXAMINATION ROOM**

QUESTION 1

Scenario: June's Luxury Hotels

June Boham has been working in the hotel industry for over 25 years. She has worked her way up from being a receptionist to a manager of several large and well-established hotels. June's skills are not only in the administration of hotels, but in providing customers with excellent service. June has now decided to open a chain of luxury boutique hotels designed especially for exclusive VIP customers. Each hotel will have a member of staff who will be responsible for ensuring the person staying in the room has all that they need.

Although she has run many hotels before, these have always been very traditional in nature, having little or no technology for managing them. This new range of luxury hotels, June wants to be as technology-enabled as possible. June has read about the idea of businesses that are being run as digital firms and thinks if she can incorporate these ideas into her new business then she can provide a high level of customer service and make a profit.

June Boham believes that communication will be at the centre of making sure that the various hotels work in an effective and coordinated way. She knows from her experience in hotels that they have to have very good systems for working, and procedures for operating. Each morning June wants to be able to speak face-to-face with the manager at each hotel each day. Furthermore, in order to keep costs down, training of staff on issues concerning looking after VIP guests will be done remotely wherever possible.

June believes that if they invest heavily in information systems she will be able to achieve significant improvements not only in how she operates but also how she interacts with suppliers, makes decisions and ultimately survives in a highly competitive market place.

As this will be the first time June will be running a business of her own, it is important that she learns as much as possible about her customers. An effective way to do this is by monitoring and interpreting the business data that is generated internally and from that which is available outside the business too. She wants to purchase a system that will allow her to make use of the data collected and turn that data into useful decision making and forecasting information.

For this question, you must use the information provided above in the scenario.

- (a) Describe how June Boham can create a chain of luxury hotels that can be described as a digital firm. Identify five of the major relationships she would need to be technology-enabled and describe three core business processes that would need to be accomplished through networks.

[10 Marks]

- (b) Explain why June Boham believes they are right to consider investing heavily in information systems and describe five strategic business objectives that could be met by making this investment.

[5 Marks]

- (c) Recommend five communications technologies that June Boham could invest in to ensure the greatest level of communication between the different hotels in the chain. Make sure your recommendations include technologies to enable June to be able to speak face-to-face with the manager at each hotel every day and also train staff remotely.

[5 Marks]

- (d) Identify six kinds of data you think could be generated by June Boham's business and describe the process of turning that data into useful decision making information. Also provide two recommendations as to what type of information system June should invest in and why.

[5 Marks]

QUESTION 2

- (a) From a business perspective, information systems are part of a series of value-adding activities for acquiring, transforming, and distributing information that managers can use to improve decision making, enhance organizational performance, and, ultimately, increase firm profitability. Using your knowledge of the computer industry, describe the primary and secondary value-adding activities in a value chain associated with the manufacture of a laptop computer and also the industry value chain for the laptop manufacturing industry.

[10 Marks]

- (b) Using your knowledge of a computer manufacturer such as Dell or IBM, compare and contrast the organisational dimension of information systems with the technical and behavioural dimensions of information systems used by such a company in this industry. For the organisational level provide examples of hierarchy of authority, separation of business functions, business processes and business culture and politics.

[10 Marks]

- (c) Using laptop computers as an example a business computing technology, describe five main trends in the way they have evolved in the last 5 years.

[5 Marks]

QUESTION 3

Scenario: The European Clothing Corporation

Established in 1950, The European Clothing Corporation is the largest manufacturer of clothes in Europe. Each one of its fifteen factories manufacturing clothes has over a thousand workers directly contributing to the design, manufacturing and distribution of a large collection of clothes for men, women and children.

Although The European Clothing Corporation has very well organised production lines, it found that as it grew in size it was becoming less and less able to meet the demands from shops for the varied types of clothes they wished to sell.

One particular aspect of The European Clothing Corporation that was different from factory to factory was the set of business processes used to design, manufacture and then distribute clothes. This was a problem in that staff and managers moving between factories had to learn whole new ways and processes for working.

Workers at The European Clothing Corporation also complained about either having too little or too much information. Furthermore, workers said that often the information they did receive was not at the right time and was not formatted correctly. As a result this information was not appropriate and therefore could not be used for decision making. This was particularly true of middle managers. To compensate for this lack of timely and appropriate information, managers generally took to “over ordering” as a method of reducing the risk of running out of component parts or materials for clothes that were being produced.

Some managers have now taken to creating their own small information systems. However, many of these systems did not communicate with each other. These islands of information were causing further problems as the data each held was often inaccurate.

For this question, you must use the information provided above in the scenario.

- (a) Define and describe a set of business processes and related information systems that could be used by The European Clothing Corporation in the manufacturing of a new suit for men. In your answer you must detail the relationship between the business processes and the information systems you recommend and explain the role played by the information systems in improving the efficiency of the business processes you defined.

[10 Marks]

- (b) To address The European Clothing Corporation’s information sharing problems, write a proposal for three new information systems that can address the needs of those working on the production line, middle management trying to make day to day decisions, and those senior managers responsible for forecasting and planning. Explain why you have chosen a particular type of information system, what it will offer, and what benefits it will bring.

[10 Marks]

- (c) Describe in detail three problems associated with different factories and parts of the same factory having their own information systems and explain the problem of over ordering.

[5 Marks]

QUESTION 4

Scenario: The Money Bank

The Money Bank is a new bank to the United Kingdom. It is in the process of opening branches in all the major cities. Each branch will need to have its own internal network, which will in turn need to be connected to a central system for the UK. All networks of the bank will also need to be connected to the UK banking system as this is used to validate transactions between customers of different banks.

All customers of The Money Bank will need to have access to their accounts via the internet. They will therefore need to be able to log in to a secure, intranet-type service, that allows a high level of security, as well as facilities to manage all aspects of their bank accounts.

The Money Bank would like as many of their customer service workers as possible to work from home, providing support to customers, via the latest communications technologies. They need to be able to chat, video conference and share data between each other and customers.

As with all banks using networks, a major worry is always network security. This is particularly bad news when parts of the network are not under the bank's control.

You have been hired by the bank as a senior network consultant, to write a report for its senior management team describing various aspects of information systems' networking, that they need to understand before making a decision on the network configuration and associated system that they will eventually install.

For this question, you must use the information provided above in the scenario.

- (a) Explain in your report to senior bank officials the characteristics of a Local Area Network, Metropolitan and Wide Area Networks and describe which of these networks would be used by the bank in different parts of their infrastructure.

[9 Marks]

- (b) The networking infrastructure for a bank such as The Money Bank relies on both public and private infrastructures to support the movement of customer information across diverse technological platforms. Now explain in your report six key networking technologies that comprise a company networking infrastructure.

[6 Marks]

- (c) Define how customer satisfaction can be measured and propose a way in which the The Money Bank could use each of the following communications technologies: Teleconferencing, Data conferencing and Videoconferencing to increase levels of customer satisfaction.

[10 Marks]

QUESTION 5

Scenario: The British Motorbike Company

Mr. C. Newton is a well-established member of the motorcycling community. He often travels with other men around the country on motorbikes, and opened a shop 20 years ago, to sell motorbikes and to repair them. His shop, The British Motorbike Company, is now becoming a favourite with cyclists. Customers bring their motorbikes to him for servicing, repairs and upgrading. Mr. Newton also sells secondhand motorbikes to customers who want them.

Until recently all administration concerned with servicing and selling of bicycles was done by Mr. Newton in paper-based accounting books. This approach has worked well for many years, however with a recent rise in business such an approach to data management is no longer efficient or practical.

A friend of Mr. Newton has suggested that he investigate the possibility of using a database management system for the shop. Mr. Newton has therefore hired you as a consultant to write the following short report.

For this question, you must use the information provided above in the scenario.

- (a) Write a report of up to 500 words explaining how the problems of managing data using a traditional paper-based file environment are solved by a relational database management system. Include in your answer a description of the capabilities and value of a database management system.

[10 Marks]

- (b) For the The British Motorbike Company, create a relational database management system design by carrying out the following tasks:

- (i) Design tables for motorcycles, customers, motorcycle parts, suppliers, service requests and parts to be serviced. Each table must have primary keys.

[10 Marks]

- (ii) Write an SQL statement to retrieve all the service requests for a customer called Jones.

[2 Marks]

- (iii) Write an SQL statement to retrieve just the customer name, and the name of the bicycle make for every bicycle in the repair shop.

[3 Marks]

QUESTION 6

- (a) It is often argued that workers find the introduction to new technologies at work difficult. In particular many workers complain that new technology leads to work being less interesting, more predictable and lead to ill health. Describe what you believe to be the characteristics of a healthy job and explain how information systems can effect these characteristics.

[5 Marks]

- (b) The introduction of new technologies in manufacturing plants is often seen as taking the power of decision making away from the worker and giving it to the machine. Workers often complain that the new systems require them to use less of their skills and training and as a result always lead to lower wages. Explain whether or not information systems necessarily always lead to de-skilling of their users and lower wages.

[5 Marks]

- (c) Compare and contrast the differences between centralized computing, personal computing, distributed computing, mobile computing and network computing in terms of topology, approach and technologies used.

[15 Marks]