

THIS PAPER IS NOT TO BE REMOVED FROM THE EXAMINATION HALLS

UNIVERSITY OF LONDON

CO1108 ZB

BSc, CertHE and Diploma Examination

**COMPUTING AND INFORMATION SYSTEMS AND COMBINED DEGREE  
SCHEME**

**Information systems: foundations of e-Business**

Date and Time: Friday 5 May 2017 : 10.00–13.00

Duration: 3 hours

There are SIX questions in this paper. Candidates should answer **FOUR** questions. All questions carry equal marks, and full marks can be obtained for complete answers to a total of **FOUR** questions. The marks for each part of a question are indicated at the end of the part in [.] brackets.

Only your first FOUR answers, in the order that they appear in your answer book, will be marked.

There are 100 marks available on this paper.

No calculators should be used.

© University of London 2017

**Question 1**      Scenario: Pharma Facials

Founded in the year 2000 by Jennifer Jones, Pharma Facials is a company offering beauty treatments for the face using products and methods backed up by scientific theory. As the concept grew, she began recruiting people she knew to market these services to exclusive beauty parlours. Pharma Facials grew into a well known and trusted brand, and the company developed into a network of managers working with local - and, increasingly, international - retailers. Jennifer ensured all of these brand advocates were passionately knowledgeable about the range of products they were marketing and selling, which increased the beauty industry's confidence in the brand's reputation.

Pharma Facials now stands on the cusp of expanding into being the main supplier to a well known group of boutique retreats. Jennifer Jones knows that the key to the company's ongoing success is through attention to detail and understanding the customer experience. However, she knows that product forecasting and ordering is more imperative than ever, and that she will have to automate these systems to ensure her managers, suppliers and customers are not disappointed. The retreats rely on internet technologies to ensure that all of their services are manageable.

For example, all supplies and services will be ordered electronically, and retreat managers will be able to request larger orders of Pharma Facials products and services via the internet and mobile devices. Each manager will be assigned an electronic key card, which will allow them to specify special packages of products for group offers and register for services.

Each hotel will have an information system, which will be used to process customer data, and to analyse the performance of the products. This information will be used for decision making and planning.

For these questions, you must use the information provided in the scenario above.

- (a) Describe the main components of an information system such as the one proposed for Pharma Facials. Describe the environmental factors that such an information system will have to operate within. [15]
- (b) Compare and contrast a value chain and a supply chain for Pharma Facials. Provide an example of each. [10]

## Question 2      Scenario: Zoomba Cars

Zoomba Cars is a relatively young company specialising in offering cars for sale to one segment of the market - women. The company was started in 2010 by Ade Ngele after she had a bad experience trying to buy a new car for herself. When she looked into the car market after this experience, she discovered that it contained a big, open secret: cars are in fact designed, manufactured and marketed for different genders and she thought she could do a better job of sourcing and selling cars to women herself. Starting in a small abandoned lot in her home town of Norwich, it grew very quickly - which was a surprise to a cynical UK car industry. She ended up opening lots in many of the major towns in the UK.

Success has meant that the company now has to look at creating and using information systems to manage its business processes and day-to-day activities. The company needs a database management system to store information about customers, products and detailed product descriptions. It needs a transaction processing system to help manage the sales cycle and a communication system for interacting with suppliers and customers.

You have been asked to write a report that answers the following questions. You should relate your answers to these questions to the scenario above.

- (a) There are **FOUR** phases of building and maintaining systems. Describe in detail each phase in relation to the system Zoomba Cars are proposing to build. [10]
- (b) Because of its relatively rapid growth in size, and its need to centralise operations, Zoomba Cars needs to design and then build a Database System. One of the most popular types of system today is a Relational Database System. Describe how a Relational Database System is designed and detail the role of SQL and the process of Normalisation. [10]
- (c) Zoomba Cars needs help understanding its own business processes of ordering, manufacturing and selling goods to customers. An Entity Relationship Diagram is an effective way of doing this. For this part of the question, draw an Entity Relationship Diagram for Zoomba Cars. [5]

**Question 3**      Business Communications

- (a) What is meant by the term 'social context' in relation to business communications? [5]
- (b) Describe **FIVE** problems associated with using email and fax as methods of communication. [15]
- (c) Describe a key video technology used by businesses to communicate today, and give **THREE** reasons why this video technology addresses problems associated with just using email or visiting face to face. [5]

**Question 4**      Security

- (a) Describe the roles of firewalls, intrusion detection systems and antivirus software in promoting security. [15]
- (b) Describe identity theft and explain how phishing is used to promote identity theft. [10]

**Question 5**      Networks

- (a) Compare and contrast the characteristics of a Local Area Network, Metropolitan and Wide Area Networks and provide an example of each. [9]
- (b) The networking infrastructure for a large company relies on both public and private infrastructures to support the movement of information across diverse technological platforms. Discuss **SIX** key networking technologies that comprise a company networking infrastructure. [6]
- (c) Demonstrate how the Internet and Internet technology work and how they support communication and e-business. [10]

**Question 6**      Scenario: Bob and Roberta's Pet Supplies

Bob and Roberta's Pet Supplies is a provider of products for pets, including specialist food only previously available from veterinary practices, as well as pet toys and bedding. Based in north London, founders Bob and Roberta Smith noticed that not only was the pet supplies industry growing, but that more and more pets were being prescribed medicalised food. During their research phase, pet owners told them that this food in particular was often inconvenient to obtain, as it was reliant on vet practices having enough in stock as well as being open at convenient hours. Pet owners also told them that they would like to order all of their pet's needs in one place, and have it delivered for convenience.

Bob and Roberta Smith are thinking of buying a major warehouse in Birmingham so that they can more easily service their growing UK market. The new warehouse will require information systems for all levels of workers within the company around the UK. Information systems will be required for workers providing day-to-day services to meet the needs of local hubs. Information systems will also be required for Bob and Roberta Smith to help with monitoring, controlling and decision making. In this way, they can forecast demand for new trends in the pet and veterinary supplies markets.

An important aspect of Bob and Roberta's Pet Supplies is the knowledge that its staff have about the pet and vet industry in the UK. However, many of its most experienced staff are nearing retirement. Bob and Roberta's Pet Supplies wishes to capture what they know before it is lost forever, especially as it markets itself on having the most knowledge of the market compared with other pet suppliers. In order to do this, it has been advised that it may need to develop an information system to manage its knowledge base.

Bob and Roberta's Pet Supplies also wishes to investigate the possibility of developing a system to manage its interactions with its customers and suppliers. Although having no experience of such systems, it has heard that in other sectors of the pet supplies industry, such as the relationship between major out of town pet supply chains and their suppliers, customer relationship management systems have been developed.

You have been hired as an information systems consultant by Bob and Roberta's Pet Supplies to make recommendations on its new information systems architecture, by answering the following questions.

For this question, you must use the information provided above in the scenario entitled Bob and Roberta's Pet Supplies.

- (a) Bob and Roberta's Pet Supplies recognises it will need information systems for all levels of employee. Compare and contrast the characteristics of Management Information Systems (MIS), Transaction Processing Systems (TPS) and Decision Support Systems (DSS). [10]
- (b) Describe the role of Knowledge Management Systems (KMS) in capturing and applying knowledge within a business, such as Bob and Roberta's Pet Supplies. In addition, illustrate your answer with suitable real-world examples. [15]

**END OF PAPER**