THIS PAPER IS NOT TO BE REMOVED FROM THE EXAMINATION HALLS

UNIVERSITY OF LONDON **CO1108 ZA**

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.

Question 1 Scenario: Halogen Lighting Company

Mr and Mrs Huld have been running the Halogen Lighting Company since the 1980s. It is a company known throughout Europe, offering a range of lighting solutions for sale or even, in more complex scenarios, for rent. Mr and Mrs Huld believe that the key to providing their customers with the best service is through attention to detail and understanding the customer's experience.

Following a recent meeting with the company's major investors, it has been decided that a chain of lighting showrooms will be opening in the next 12 months. This chain will provide local people with an opportunity to see the lighting on offer in person. Employees at these showrooms will communicate with each other via internet technologies and each showroom will be a digital firm.

All supplies will be ordered electronically, and guests will be able to make orders via the internet and mobile devices. Each customer will be assigned an electronic password, which will allow them to order items and register for services such as hiring specialists to fit the lights purchased, or commissioning more multifarious schemes.

Each lighting showroom will have an information system, which will be used to process customer data, and to analyse the performance of the individual showroom in comparison with others. This information will be used for decision making and planning.

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

(a) Describe **THREE** input, processing and output components of an information system that the Halogen Lighting Company could use and detail six different environmental factors that its information system must interact with. [15]

(b) Compare and contrast a value chain and a supply chain for the Halogen Lighting Company. Provide an example of each. [10]

Question 2 Software development

(a) Describe in detail the **FOUR** phases of building and maintaining an information software system. For each phase, define the key processes, how they are undertaken and what the outputs are. [10]

(b) Explain why a systems development project may fail during one of the four phases of building and maintaining systems. Explain why a systems development project success or failure is not just a technical issue. [5]

(c) There are many obstacles to applying IT effectively within the real world. These include *unrealistic expectations* and the innate *difficulty in building systems*. Discuss these **TWO** obstacles and provide an example of each. [10]

Question 3 Scenario: Hodder and Hodder Financial Services

Hodder and Hodder Financial Services is the largest provider of financial services in the UK, offering mortgages to investments. With offices in London, Manchester and Birmingham, it provides telephone-based financial services quotes and sales. A key feature of its business model is that Hodder and Hodder has no shop outlets. Hodder and Hodder rely on their customers having access to internet information systems or at least telecommunications systems to buy their services.

It has now been decided that Hodder and Hodder need to create a new database management system and communication system to stay at the forefront of their business. At a senior management meeting, it has been proposed that the design of the new information system should be outsourced to a company in Estonia. It is argued that, by outsourcing the functions, many benefits can be gained.

However, not all members of the management team are in agreement. Issues arise in terms of communicating with the outsource supplier, and even whether it is possible to specify all the requirements of the system in the UK and send these specifications to be interpreted correctly in Estonia.

For this question, you must use the information provided above in the scenario entitled **Hodder and Hodder Financial Services**.

(a) Discuss four reasons why companies such as Hodder and Hodder would use outsourcing to develop and manage their information systems. Your answer should include **TWO** real world examples of companies that outsource functions and where they have outsourced them to. [10]

(b) Discuss **FIVE** disadvantages of Hodder and Hodder taking an outsourcing approach to developing and managing information systems. [10]

(c) Discuss **FIVE** considerations that Hodder and Hodder should make before attempting to outsource information systems development. [5]

Question 4 Scenario: The Monaco Banking System Testing Team

The software testing team at the UK headquarters of the worldwide financial services giant the Monaco Banking System has been established for ten years. During that time they have created a detailed set of software testing procedures. These procedures detail how penetration testing, white and black box testing and user experience testing is to be carried out.

Last year, a directive from the main headquarters in the US was received. With the complexity of introducing new technology constantly, across a company with many different regions and autonomous testing teams within those regions, it was decided to build a knowledge base in the form of a decision support system so that the ten-years worth of experience in making testing decisions and designing and running successful testing processes could be captured and shared more effectively.

Several people within the team did not like the idea of a new system. They were suspicious that once the new system had been established, they would be made redundant. Others thought that the new system would mean a loss of autonomy in their work, meaning that they would not be able to make their own decisions but they would have to do exactly what the system told them at all times.

(a) Using the Monaco Banking System Testing Team illustrated above as your example, explain how information systems depend upon people for their success and how their deployment affects people. [5]

(b) Using the above scenario, compare and contrast how people and machines perform when executing tasks in general, and specifically the characteristics exhibited by people and machines when a task's execution involves the need for each of the following:

i. Rule-following
ii. Understanding
iii. Imagination
iv. A global view

[10]

(c) When planning a new implementation of an information system, members of a project team such as the one at the Monaco Banking System will be faced with many alternative ways by which decisions may be made. Describe **FIVE** common flaws in the ways people make decisions. [10]

Question 5 Systems development

(a) Explain the following terms that may be used when discussing systems: Purpose; Boundary; Environment; Inputs and Outputs. [10]

(b) Explain what is meant by the term "business processes" in relation to creating value for customers. Following this, describe the scope of a business process and the value-added by a business process. [5]

(c) Describe in detail the differences between the practices of E-business and E-commerce. Outline **THREE** key E-commerce activities. [10]

Question 6 Systems and Value Chains

(a) Explain the differences between a firm's value chain and its supply chain. [5]

(b) Explain what is meant by the term "business processes" in relation to creating value for customers. Following this, describe a set of business processes that could form the value chain of a smartphone manufacturer. Then explain how this value chain can be used to identify opportunities for the smartphone manufacturer. [15]

(c) Explain how information systems depend upon people for their success and how their deployment affects people. [5]

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