

THIS PAPER IS NOT TO BE REMOVED FROM THE EXAMINATION HALLS
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UNIVERSITY OF LONDON

CO1108 ZA

BSc, CerTHE and Diploma Examination

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

Information systems: foundations of e-Business

Tuesday 8 May 2018: 10.00 – 13.00

Time allowed: 3 hours

There are **SIX** questions on 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.

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Question 1 Scenario: Rent-A-Helpline

Rent-A-Helpline is an internet and telephone-based technical support service company that provides helpline services to companies.

A key feature of its business model is that Rent-A-Help-line has no UK based offices. All its staff are based in East Asia where labour costs are lower.

Due to its ever increasing size and client list it has now been decided that Rent-A-Helpline needs to create a new database management system and communication system. At a senior management meeting, it has been proposed that the design of the new information system should be outsourced to a company in India. 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 India.

- (a) Discuss **FIVE** reasons why companies such as Rent-A-Helpline might use outsourcing to develop their database systems. Your answer should include **FIVE** real world examples of companies that outsource functions and where they have outsourced them to.

Up to two marks will be awarded for each reason discussed and a further one mark for each example given.

[15]

- (b) Discuss **TWO** disadvantages of taking an outsourcing approach to developing and managing information systems. For each disadvantage give a real world example.

Up to three marks will be awarded for each disadvantage discussed and a further two marks for each example given.

[10]

Question 2 Business Processes and Systems

- (a) Describe **FIVE** business processes that could form the value chain of a computer manufacturer. Then explain how, using value chain analysis, this computer manufacturer could identify opportunities for improvement in its manufacturing processes.

Up to two marks will be awarded for each business process discussed and a further five marks will be awarded for demonstrating your understanding of how the manufacturer could identify opportunities for improvement using value chain analysis.

[15]

- (b) Provide **TWO** examples of how information systems can be used to enhance the business processes of a company.

Up to five marks will be awarded for each example.

[10]

Question 3 Scenario: Queens Park Services

Queens Park Services is a large cleaning contractor in central London employing over 200 people as cleaners and 20 office staff. Recently there has been growing unrest among staff since the introduction of a new real-time transaction processing system to process each job undertaken and the billing of customers. This system has replaced the previous batch processing system. With the new system, jobs are updated immediately and show up on the system without approval from managers, which was required under the old system. Also, if staff have not done their allocated work on time this is immediately flagged, due to the real-time nature of the new system. These changes have led to confusion. Furthermore, sometimes many jobs are released on to the system at once, so they are difficult to allocate and manage. As a result of the problems with the new transaction processing system, many workers have reverted to the manual system used before.

You have been hired as a consultant to explain to staff how the new system works and why a transaction processing system is needed at all.

- (a) Describe **TWO** benefits that could come to Queens Park Services and employees from the introduction of a real-time transaction processing system, and the difference between real-time and batch processing of transactions.

Up to five marks will be awarded for each benefit discussed and up to five marks will be awarded for discussion of the differences between real-time and batch processing of transactions.

[15]

- (b) At Queens Park Services there have also been issues with the use of the company's email system. Several members of staff have been using it to complain about other workers to the rest of the company. Furthermore, some managers have sent emails that were regarded as rude to staff. Describe **FIVE** communication problems associated with using email as a method of business communication.

Up to two marks will be awarded for each problem described.

[10]

Question 4 Technology, Work and Society

- (a) It is often argued that workers find the introduction of new technologies at work difficult. In particular, many workers complain that new technology makes work less interesting, more predictable and can lead to ill health. Describe **FIVE** characteristics a healthy job should possess and explain how information systems can affect these characteristics.

Up to three marks will be awarded for explanation of each characteristic of a healthy job and how information systems may negatively affect workers. [15]

- (b) The introduction of new technologies is often seen as taking the power of decision-making away from the worker and giving it to the computer. Employees often complain that the new systems require them to use fewer skills and less of their training, and as a result always lead to lower wages. Explain the reasons for and against the argument that new technologies always lead to de-skilling of their users and lower wages. [10]

Question 5 Scenario: Dystopia Immigration Service

The Dystopia Immigration Service has been worried about the ever increasing number of immigrants coming over the border and working in their country. The situation is made worse by the fact that many of these immigrants arrive with illegal papers which allow them to fraudulently work and claim benefits.

In 2017 the Dystopia government doubled prison sentences for the crimes of employing illegal immigrants and counterfeiting documents. Although initially this measure reduced the number of companies employing illegal immigrants, research has suggested that the number has begun to rise again.

Although more and more immigration officers have been trained and a national campaign has been running to make people aware of illegal immigrants and the penalties of employing them, this campaign seems to have had little effect.

At a recent meeting of Immigration Service managers, it was suggested that technology could be the answer. The following proposals were put to the Immigration Service as a way to solve the rising number of illegal immigrants working.

All members of the public would have to carry a signal emitting card that would broadcast their exact location at all times. Anyone caught outside without a card would be presumed to be an illegal immigrant, or at least up to no good.

All companies and individuals must only use a government-approved email system which can be accessed and read by the immigration service so that they can check only legitimate people are working for these companies.

High definition cameras would be installed throughout the country, 150 yards apart. They would be fitted with night sensors and infrared so that they can record people both day and night.

All phone calls, texts, emails, video messages and other electronic communications would be recorded. This data would be submitted to a profiling and Non-Obvious Relationship Awareness (NORA) system.

All web searches made would also be submitted to a profiling and Non-Obvious Relationship Awareness system.

All purchases made over 20 pounds sterling would have to be made using a credit/debit card linked directly to the national earnings, tax and

insurance database. If the purchaser does not appear to be a legitimate resident of the country, they would have to declare the reason for the transaction to the local police station.

Using the information in the above scenario answer the following questions.

- (a) Non-Obvious Relationship Awareness (NORA) information systems allow their users to mine data from data resources to determine non-obvious relations between people or organisations. Often this enables users to use data to uncover unexpected relationships. Describe how the Dystopia Immigration Service could use the collected data via its monitoring of all phone calls, texts, emails, video messages and other electronic communications as part of a NORA information system to determine who is working illegally.

[15]

- (b) Using the information in the above scenario, describe **TWO** limitations of using a Non-Obvious Relationship Awareness (NORA) information system to monitor and control immigration into Dystopia.

Up to five marks will be awarded for each limitation described.

[10]

Question 6 Computing technologies

Describe the following types of computing in terms of topology, approach and technologies used, clearly distinguishing each type.

- i. centralized computing
- ii. personal computing
- iii. distributed computing
- iv. mobile computing
- v. wireless computing

Up to five marks will be awarded for each description.

[25]

END OF PAPER