UNIVERSITY OF LONDON

FOR EXTERNAL STUDENTS (West)

B. Sc. Examination 2005

COMPUTING AND INFORMATION SYSTEMS

CIS108   Information systems: The Foundation of E-Business

Duration: 3 hours

Date and time:

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*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**

(a) Compare and contrast the terms "system" and "subsystems" in the context of IT while performing work in businesses and government organisations.

[ **5 Marks** ]

(b) Expain the following terms that may be used when discussing systems: Purpose; Boundary; Environment; Inputs and outputs.

[ **5 Marks** ]

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

[ **5 Marks** ]

(d) Describe what is meant by a firm's *value chain*. Include in your answer a description of primary and secondary processes and an example of a value chain for a restaurant.

[ **5 Marks** ]

(e) Describe in detail the differences between the practices of E-business and E-commerce. Following this outline five key E-commerce activities.

[ **5 Marks** ]

**QUESTION 2**

(a) Compare and contrast the role of frameworks and models in systems analysis. Include in your answer at least one example of each.

[ **5 Marks** ]

(b) Explain how the concept of a work system provides business professionals with a useful tool for examining almost any system.

[ **5 Marks** ]

(c) List the seven principles of the Work System Framework and explain why failing to follow the work system principles may lead to inefficiency and ineffectiveness.

[ **10 Marks** ]

(d) Describe the process of systems analysis and explain the four step decision making process that it consists of.

[ **5 Marks** ]

**QUESTION 3**

(a) Compare and contrast physical and logical views of data. Include in your answer at least one example of each.

[ **5 Marks** ]

(b) Data can be accessed using either a push or a pull system. Compare and contrast these systems. Include in your answer a discussion on pre-programmed access and ad-hoc access to such data.

[ **5 Marks** ]

(c) Provide a detailed description of entity relationship diagrams (ERDs). Include in your answer the approach taken to model a database when using ERDs.

[ **5 Marks** ]

(d) Describe in detail the relational database model. Include in your answer an explanation of the process of Normalisation and Structured Query Language (SQL).

[ **5 Marks** ]

(e) Multi-dimensional databases are the technical basis of most data warehouses. Describe in detail the steps involved in the process of creating and maintaining a data warehouse.

[ **5 Marks** ]

**QUESTION 4**

(a) When evaluating a work system, it is important not only to understand how it operates, but also how it is currently performing. Performance is a description of how well the system and its components operate.

Compare and contrast a work system's architecture with its performance. Your answer should include a description of the set of performance variables discussed in the course.

- Customers (1 Variable);
- Products and Services(4 Variables);
- Business Processes(7 Variables);
- Participants(4 Variables);
- Information(4 Variables);
- Technology(5 Variables).

[ **25 Marks** ]

**QUESTION 5**


(a) Describe in detail the term "user-friendliness". Include in your answer an explanation of the three key characteristics to which aspects of user-friendliness are generally related.

[ **10 Marks** ]

(b) Compare and contrast the important distinctions between ethical and legal information systems issues. Include in your answer two common ethical theories.

[ **7 Marks** ]

(c) In the case of information systems, four key areas tend to involve ethical dilemmas. These are privacy, accuracy, property and access. Describe in detail these four areas in relation to the use of information systems.

[ **8 Marks** ]

**QUESTION 6**

(a) Write detailed descriptions on each of the following:

    (i) Relational Databases

    (ii) Multi-Dimensional Databases

    (iii) Transaction Processing Systems

    (iv) Geographical Information Systems

    (v) Expert Systems

**[ 25 Marks ]**