

UNIVERSITY OF LONDON

GOLDSMITHS COLLEGE

BSc Examination 2003

COMPUTING AND INFORMATION SYSTEMS

CS52006A (CS216) Introductory Information Systems:

Duration: 3 hours

Date and time:

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- *Do not attempt more than FOUR questions on this paper. Full Marks will be awarded for complete answers to FOUR questions.*
 - *Electronic calculators are not needed for this examination and therefore should not be used.*

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

Question 1.

- a) Define a framework and a model and describe the differences between each. In your answer, say why frameworks are an important aspect of understanding work systems.

[6 Marks]

- b) Briefly describe the four steps in a general systems analysis process as discussed in the course.

[4 Marks]

- c) Why do general success factors for work systems apply to information systems and projects? In relation to the business process of registering students at a university, identify four success factors.

[6 Marks]

- d) Provide two examples of information systems that support aspects of a work system but not necessarily all of it.

[4 Marks]

- e) A work system framework identifies eight elements needed to understand a work system. Identify each of these elements in a work system for consuming a meal at a restaurant. In your answer, identify the product of the work system and explain how you would evaluate that product.

[5 Marks]

Question 2

- a) What is the difference between a database, a database management system, data warehouse?

[6 Marks]

- b) What is the difference between a logical and physical view of data?

[4 Marks]

- c) Briefly describe the differences between an entity and an entity type. Detail three attributes for the entity type 'student'.

[4 Marks]

d) What is an entity-relationship diagram, and why is this technique important in database design?

[4 Marks]

e) Define a database schema and a database subschema.

[4 Marks]

f) Define backup and recovery, and explain why these capabilities are needed in a DBMS.

[3 Marks]

Question 3

a) Identify four different types of information system that can have an impact on both communication and decision-making. For each type of system, provide two examples.

[8 Marks]

b) Describe the differences and similarities between EDI systems and supply chain management (SCM) systems. In your answer state why EDI is fundamental to SCM.

6 Marks]

c) Describe three applications of CAD systems and state how CAD systems relate to mass customisation.

[6 Marks]

d) Define an MIS, DSS, and EIS. Which of these systems is likely to contain a set of **if-then rules** ?

[5 Marks]

Question 4.

a) List 6 strengths that humans have over machines.

[6 Marks]

b) Describe the characteristics of a healthy job that are presented in the course, explaining how the information systems affect these characteristics. List two jobs that you consider to be healthy and one unhealthy, justifying your choices.

[7 Marks]

c) What are the main distinctions between ethical issues and legal issues? Give one example of each type of issue.

[8 Marks]

d) List four major ethical issues related to information systems. Describe each of them in brief.

[4 Marks]

Question 5.

- a) What is data encryption? Enumerate two applications. **[5 Marks]**

- b) Describe data compression and list two compression standards. **[6 Marks]**

- c) Describe the basic ideas of the network computing. Provide an example of this computing approach. **[6 Marks]**

- d) Explain the basic ideas behind distributed computing. Enumerate the advantages and disadvantages of this approach to computing, that are presented in the course. **[8 Marks]**

Question 6.

- a) Describe the basic ideas of the Packet Switching method used in directing data from source to destination. **[5 Marks]**

- b) Describe the four phases of building information systems based on the Application Packages approach. **[14 Marks]**

- c) List the advantages and disadvantages of the Prototype approach to building information systems, that are presented in the course. **[6 Marks]**

END OF EXAMINATION