

THIS PAPER IS NOT TO BE REMOVED FROM THE EXAMINATION HALLS

UNIVERSITY OF LONDON

291 0108 ZB

BSc/Diploma Examination
for External Students

COMPUTING AND INFORMATION SYSTEMS

Information Systems: The Foundation of E-Business

Dateline: Friday 15 May 2009 : 10.00 – 1.00 pm

Duration: 3 hours

There are six questions in this paper. Candidates should 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.

QUESTION 1

- (a) Explain how information systems depend upon people for their success and how their deployment affects people.

[5 Marks]

- (b) 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 Marks]

- (c) When planning a new implementation of an information system members of the project team will be faced with many alternative ways by which decisions may be made. Describe five common flaws in the ways people make decisions.

[10 Marks]

QUESTION 2

- (a) Explain why a business professional would seek to transform customers of self-service systems into participants.

[5 Marks]

- (b) Define the term Customer Satisfaction and identify its key elements.

[5 Marks]

- (c) Compare the internal customers of work systems with their external customers.

[5 Marks]

- (d) Explain the relationship between Data, Hard Data, Soft Data, Information and Knowledge.

[5 Marks]

- (e) A key outcome of a human-centred design is user-friendliness. Describe how user-friendliness manifests itself and outline three key characteristics of user-friendly software systems.

[5 Marks]

QUESTION 3

Scenario: NGA Bank

Inside a branch of the NGA Bank, Ms. Brown, a potential mortgage client, and Ms. Blue, a financial advisor with NGA, are sitting in front of a PC running a presentation package. Ms. Brown is Ms. Blue's first client in her new post, the result of a promotion which followed an extended series of appraisal interviews between Ms. Blue and the branch manager, Ms. Green. The specific presentation being run is one the bank has prepared in order to help financial advisors to explain to potential clients the different types of mortgage deals that the bank is offering at any one moment.

Ms. Brown and Ms. Blue are now at a stage in the presentation which involves the financial advisor asking the potential client about certain details relating to financial status (e.g., salary, regular commitments, etc.) and preferences (e.g. fixed or variable interest rate, repayment or endowment, etc.). Ms. Blue has just logged in to the bank's mainframe computer remotely and started a session with a system, known as NGA-SS, specifically designed to capture the sort of customer data just described and suggest which, among those on offer, is the best deal for Ms. Brown. The mortgage deals used by this system were in turn generated by a very large system, known as NGA-MD, that NGA financial analysts use to choose different mortgage deals that will help NGA increase its attractiveness in the face of tough competition.

After Ms. Brown decides on which of the deals she would like to receive more information, Ms. Blue will send an email to Mr. White, the branch's secretary, and ask him to forward a written quote by fax to Ms. Brown's home address along with a covering letter including details about the validity period of the offer.

For this question, you must use the information provided above in the scenario entitled **NGA Bank**.

- (a) Explain the difference between personal and impersonal communication and illustrate it with examples from the given scenario.

[4 Marks]

- (b) Illustrate the following classes of communication technologies: same-time same-place, same-time different-place, different-time same-place, different-time different-place, using one example for each, taken from the given scenario entitled **NGA Bank**.

[4 Marks]

- (c) List four types of information systems that occur in the given scenario, justifying each type that you list with the passages in the scenario that are relevant.

(question continues on next page)

[8 Marks]

(d) For each of the four types of information system you listed in in part (c), briefly explain, using the information conveyed in the given scenario, where in the plan-execute-control cycle it is being applied.

[9 Marks]

QUESTION 4

- (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 examples of 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 5

- (a) Compare and contrast the characteristics of a Local Area Network, Metropolitan and Wide Area Networks and provide an example of each

[6 Marks]

- (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 Marks]

- (c) Demonstrate how the Internet and Internet technology work and how they support communication and e-business

[10 Marks]

- (d) Describe the communications technologies Teleconferencing, Dataconferencing and Videoconferencing

[3 Marks]

QUESTION 6

- (a) Explain why the continuing trends toward connectivity and interoperability provide opportunities for businesses to compete more effectively when using information systems

[5 Marks]

- (b) Using laptop computers as an example, describe five main trends in the way they have evolved in the last 5 years.

[5 Marks]

- (c) Discuss why open systems can be viewed both as an opportunity and as a threat.

[5 Marks]

- (d) Use the four phases in building and maintaining systems to describe the project of writing a software program and identify challenges or problems that could take place at each phase.

[5 Marks]

- (e) Compare the roles of systems analyst and a project manager.

[5 Marks]

END OF PAPER