

BCS THE CHARTERED INSTITUTE FOR IT

BCS HIGHER EDUCATION QUALIFICATIONS

BCS Level 4 Certificate in IT

INFORMATION SYSTEMS

Tuesday 26th April 2011 - Afternoon

Time: TWO hours

Section A and Section B each carry 50% of the marks. You are advised to spend about 1 hour on Section A (30 minutes per question) and 1 hour on Section B (12 minutes per question).

Answer the Section A questions you attempt in Answer Book A

Answer the Section B questions you attempt in Answer Book B

The marks given in brackets are **indicative** of the weight given to each part of the question.

Calculators are NOT allowed in this examination.

SECTION A

Answer TWO questions out of FOUR in Answer Book A. Each question carries 30 marks.

- A1. Estate agents handle the sale of dwelling properties (houses, bungalows, flats, etc) within a specific geographical area. Business has been poor and so several estate agents have agreed to work together to sell properties covering a larger area. They require a new web site to be designed. Your software house has been approached to provide this service. The web site should be accessible by both buyers and sellers. It will need to provide an on-line search facility containing the chosen geographical area, type of property required, number of bedrooms, minimum and maximum prices. The house details will need to be displayed including photographs and location maps.
- a) Describe how you would investigate this request using a methodology with which you are familiar. Include possible tools and techniques you would use.
(15 marks)
- b) Draft a set of screens, which you can use to present to the companies.
(10 marks)
- c) Briefly describe FIVE aspects of screen/dialogue design you should take into account when developing the web site.
(5 marks)

Turn over]

- A2. a) There are several methods used when analysing an existing system. Identify the advantages and disadvantages of the following:
- i) Interviews
 - ii) Questionnaires
 - iii) Observation
- (9 marks)**
- b) Design a short questionnaire, which can be used by the system analyst, to obtain the estate agents' requirements from the outline in question A1.
- (9 marks)**
- c) Define what is meant by prototyping and briefly describe THREE different approaches to prototyping.
- (12 marks)**
- A3. a) Describe and give an example of a PERT chart and a histogram (GANTT chart).
- (9 marks)**
- b) Define the following statistical terms:
- i) Mean
 - ii) Mode
 - iii) Median
- (6 marks)**
- c) Compare and contrast the following:
- i) A logical data model and a physical data model
 - ii) The role of a systems analyst and a database administrator
 - iii) Data in un-normalised form and data in third normal form
- (15 marks)**
- A4. a) Write brief notes on the following:
- i) Outsourcing
 - ii) Facilities management
 - iii) Business process re-engineering
- (4 marks)**
- (4 marks)**
- (4 marks)**
- b) You are an IT manager within a software house. You have been asked to draw up a plan to provide security within the system you are developing. Describe what measures you can take to ensure
- i) The reliability and integrity of your data
 - ii) Physical security
- (12 marks)**
- c) What is meant by the BCS code of conduct and good practice? Assuming you are employed as an IT manager how does it apply to the company that has employed you?
- (6 marks)**

SECTION B

Answer FIVE questions out of EIGHT in Answer Book B. Each question carries 12 marks.

- B5. State the stages that follow analysis in a systems modelling life cycle of your choice. For each stage discuss what documents would be produced and why.
(12 marks)
- B6. a) State the differences between data and information.
(4 marks)
- b) Discuss the differences between a traditional database and a data warehouse.
(8 marks)
- B7. What is represented in the following system development diagrams:
- i) Entity Relationship Diagram
(4 marks)
- ii) Entity Life History
(4 marks)
- iii) Data Flow Diagram
(4 marks)
- B8. At which stage or stages in the systems development life cycle would you test and why?
(12 marks)
- B9. When discussing the purchase of a new computer system, what would you expect to be in the contract with the supplier within a business environment?
(12 marks)
- B10. Discuss the composition and roles of a development team that takes an initial project brief for a computer system through to its implementation.
(12 marks)
- B11. a) In methodology, what is meant by the following terms and state one methodology that you consider to fit that term and why.
- i) Hard
(3 marks)
- ii) Soft
(3 marks)
- b) Name one Object Oriented Methodology and outline the tools and techniques that would comprise that methodology
(6 marks)
- B12. Discuss four typical functions of a Database Management System (DBMS)
(12 marks)