

**BCS The Chartered Institute for IT**

**BCS HIGHER EDUCATION QUALIFICATIONS  
BCS Level 4 Certificate in IT**

**INFORMATION SYSTEMS**

Tuesday 28<sup>th</sup> September 2010 - Morning  
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 <b>NOT</b> allowed in this examination.
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**SECTION A**

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

A1

A specialist motor car company needs to upgrade its website. It has decided to hold on-line auction for some of its cars. This auction will only be open to registered enthusiasts, who belong to a recognised motoring club. In order to enter a bid, the enthusiast has to have been registered with the company. The system needs to record the car details, registered enthusiasts, motoring club details, the lots (car to be auctioned) and the bids. Each lot has a minimum reserve price and a specified time span. Enthusiasts can join the bid and make as many offers as required. When the elapsed time has been reached, the auction closes and the successful bidder is contacted to arrange payment, either by debit or credit card.

a) Design a set of screens to:

- (i) Display car details
- (ii) Make a bid

**(12 marks)**

b) The design of the interface is extremely important to the company. Describe the issues that need to be taken into consideration when designing this interface.

**(12 marks)**

c) Traditionally, professionals carried out the analysis, design and programming phases. Discuss how these roles have changed over the years.

**(6 marks)**

A2

- (a) There are several methods that can be used in business systems analysis. Briefly describe the basic stages, components and techniques of the following methodologies:

- (i) SSADM (not the Systems Development Life Cycle)
- (ii) OOAD
- (iii) RAD

**(24 marks)**

- (b) Briefly describe the following specification techniques, giving an example of each

- (i) Flowchart
- (ii) Decision Table
- (iii) Pseudocode

**(6 marks)**

A3

- a) You have received the terms of reference for a new large project and been assigned to manage it. It is expected to take six man months to develop. Prepare a plan showing how you would manage the project.

**(15 marks)**

- b) Discuss the main features of each of the following

- (i) Data Warehouse System
- (ii) Expert System
- (iii) CASE tool

**(12 marks)**

- c) Describe the rules for:

- (i) First Normal Form
- (ii) Second Normal Form
- (iii) Third Normal Form

**(3 marks)**

A4

- a) Documentation is an essential part of system development. Discuss this statement giving reasons and examples of what should be contained in a typical systems specification manual.

**(10 marks)**

- b) What security measures would you take in the following cases:

- (i) To be able to recover from a fire in the Accounts Department, which has affected all computers and valuable data has been lost.
- (ii) To prevent a disgruntled employee from deleting crucial data.

**(10 marks)**

- c) Define the following terms and give two examples of each from the case study in question 1.

- (i) An entity
- (ii) A relationship
- (iii) An attribute
- (iv) A primary key
- (v) A foreign key

**(10 marks)**

### **SECTION B**

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

B5

What are the typical duties of a Database Base Administrator for a large scale company ?

**(12 marks)**

B6

Outline the typical organisational structure of an IT company.

**(12 marks)**

B7

When designing and developing a web site, how would you ensure that the web site can be used by disabled users?

**(12 marks)**

B8

Discuss what is meant by the following terms:

- (i) Black box testing
- (ii) White box testing
- (iii) Regression testing.

**(3 times 4 marks)**

B9

Discuss what is meant by the following terms

- (i) XML
- (ii) ASP (Active Server Pages)
- (iii) Web 2.0

**(3 times 4 marks)**

B10

Outline a Fact Finding Plan for ensuring that all of the potential customers requirements are captured.

**(12 marks)**

B11

Outline the database rules and logic that ensures that the entry of a customers name and address is correctly achieved.

**(12 marks)**

B12

There is an argument that the multimedia element of a web site consumes too much network bandwidth and that the web site should just be textual.

Argue against this statement, stating why multimedia should be used.

**(12 marks)**