

BCS THE CHARTERED INSTITUTE FOR IT

BCS HIGHER EDUCATION QUALIFICATIONS
BCS Level 4 Certificate in IT

INFORMATION SYSTEMS

Friday 28th March 2014 - 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 NOT allowed in this examination.

SECTION A

Answer 2 questions (out of 4) in Answer Book A. Each question carries 30 marks

A1 You are a senior member of a large software house and have been asked to investigate the possibilities of developing an on-line ordering system for a well known global supermarket company.

a) Describe a suitable methodology which could be used to analyse, design and develop the system including the tools and techniques which could be used. (16 marks)

b) Give examples of the following:
i) The main processes the system should provide.
ii) The main data stores required (6 marks)

c) Describe the uses of the following, giving an example from the above system:
i) A High Level Data Flow diagram
ii) An Entity Relationship Diagram (8 marks)

A2 a) A feasibility study for the on-line ordering system needs to be provided to the supermarket company mentioned in question A1. Describe the contents of a feasibility report (12 marks)

b) Describe the purposes of a PERT and Gantt chart, giving an example of each using the software development life cycle. (8 marks)

c) Briefly describe how you would manage the development of the on-line ordering system mentioned in question A1. (10 marks)

Turn Over]

- A3** a) What is the difference between data and information? Give an example. (4 marks)
- b) Data can be stored and presented in many formats. Identify six different types of data and provide examples of each, which may be used in a large supermarket's business applications (3 marks)
- c) What is the purpose of Database Management Systems and what facilities do they provide? (14 marks)
- d) Briefly describe three different types of Database Management Systems. (9 marks)
- A4** a) Testing should take place throughout the development of a system. Describe a strategy you would adopt to ensure a system is thoroughly tested before it is implemented. (12 marks)
- b) Describe three different approaches to transferring data from an old system to a newly developed system, indicating advantages and disadvantages of each. (12 marks)
- c) Apart from testing and transferring data, what other aspects need to be taken into consideration when implementing a large computer system? (6 marks)

SECTION B

Answer 5 questions (out of 8) in Answer Book B. Each question carries 12 marks.

- B5** Human Computer Interaction (HCI) is seen as an essential part of any computer application.
- Briefly discuss what guidelines you would consider when using:
- a) Colour (4 marks)
 - b) Fonts (4 marks)
 - c) Icons (4 marks)
- B6** a) State and briefly discuss one prototyping technique. (4 marks)
- b) Discuss the disadvantages of the prototyping technique stated in a) (8 marks)
- B7** Discuss the security measures you would put in place to ensure the following are secure:
- a) The server room (6 marks)
 - b) The web site (6 marks)
- B8** Discuss what is meant by the following methodology related terms:
- a) Hard (4 marks)
 - b) Soft (4 marks)
 - c) Agile (4 marks)

B9 a) What are the advantages of data being in third normal form (3NF)? (3 marks)

b) Discuss, with reference to an example, the three stages of 3NF? (9 marks)

B10 a) What function does a computer help desk system perform in an organisation? (6 marks)

b) What reports would you expect to be generated from a help desk system that could aid the management of a computer project? (6 marks)

B11 With respect to management reporting structures, discuss the following terms:

a) Matrix management (6 marks)

b) Hierarchical management (6 marks)

B12 As a project manager, imagine you have 12 months to complete a computer project from initial conception to installation and hand over.

Discuss the stages of a computer project and how long (in weeks) would you assign to each stage.

(12 marks)