

BCS THE CHARTERED INSTITUTE FOR IT
BCS HIGHER EDUCATION QUALIFICATIONS
BCS Level 4 Certificate in IT

INFORMATION SYSTEMS

Wednesday 11th November – 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 any Section A questions you attempt in Answer Book A
Answer any 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). Each question carries 30 marks.

A1.

- a) A large building company is preparing to build a new housing estate containing over 100 houses of differing sizes and designs. The company requires new systems to deal with the processes involved in selling the houses. Describe a suitable approach which could be used to investigate the requirements and propose a new system. Include any appropriate tools and techniques which could be used. **(14 marks)**
- b) One part of the required system would be screens which could be used by the receptionist in the temporary site office to monitor enquiries including the type, style and price of the house required and record details of prospective buyers. Design **TWO** screen prototypes which would deal with these processes. **(8 marks)**
- c) Briefly list and describe **FOUR** different aspects of screen design techniques which could be used. **(8 marks)**

A2.

- a) What is the purpose of a feasibility report and which elements need to be investigated and included within the report? **(12 marks)**
- b) Give an example of a PERT and a GANTT chart using stages of an information system project. **(6 marks)**
- c) There are typically **THREE** levels of management within an organisation. Briefly describe these three levels and give examples of different types of information required and software associated with **EACH**. **(12 marks)**

A3.

- a) What is the purpose of an entity life history? Provide an example using the 'life' of a car bought, rented, maintained and sold by a rental company. **(6 marks)**
- b) Explain why object-oriented techniques provide a more robust system. **(2 marks)**
- c) Describe the following object-oriented terms and give an example of **EACH** based on the object vehicle (car) described above where appropriate:
- i) Class;
 - ii) Method;
 - iii) Inheritance;
 - iv) Persistence.
- (12 marks)**
- d) Identify possible reasons why the development of a large project might fail. **(10 marks)**

A4.

- a) Companies rely on their information systems and need to have a disaster recovery plan so they can continue with their business with the least amount of interruption. Prepare a report indicating areas which should be included in the plan. **(12 marks)**
- b) A large IT department within a university has three managers. Describe the responsibilities of **EACH** of the following including skills and qualifications required:
- i) Information systems manager;
 - ii) Technical manager;
 - iii) DBA.
- (9 marks)**
- c) As part of the planning and development of an information systems project, the method of implementation needs to be decided. Once the system has been developed, coded and tested, it needs to be given to the user.

Identify **THREE** different methods which could be used, giving the advantages **AND** disadvantages of **EACH** one and indicate the circumstances when they could be used.

(9 marks)

[Turn Over]

SECTION B

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

B5.

Discuss the advantages **AND** disadvantages to a small computing company of using a cloud provider to store and process their data.

(12 marks)

B6.

What additional documentation is required to convert an Entity Relationship Diagram (ERD) into an Entity Relationship Model (ERM)?

(12 marks)

B7.

Demonstrate, by giving example questions, how Quantitative **AND** Qualitative questions can be used in a questionnaire to gain suitable responses.

(12 marks)

B8.

Traditional relational databases use Structured Query Languages (SQL), but there has been a growth in NOSQL databases.

Describe the key features of **EACH**.

(12 marks)

B9.

Using the numbers below, calculate and explain what is meant by the following terms:

1,4,1,4,2,4,5,6,7,6

a) Mode;

(4 marks)

b) Median;

(4 marks)

c) Mean.

(4 marks)

B10.

Quality is an essential part of any project.

Describe the processes and policies you would implement to ensure that all documentation meets the appropriate standard for quality.

(12 marks)

B11.

A start-up company is concerned about their initial security issues. What needs to be put in place first for their:

- a) Logical Security; **(6 marks)**
- b) Physical Security. **(6 marks)**

B12.

The use of Multimedia is often seen as essential to the success of many websites.

Discuss the guidelines you would recommend for use of **THREE** different types of media.
(12 marks)

End of Examination