

BCS THE CHARTERED INSTITUTE FOR IT

BCS HIGHER EDUCATION QUALIFICATIONS
BCS Level 4 Certificate in IT

INFORMATION SYSTEMS

Monday 20th April 2026 - 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.

You are a senior member of a large software house and have been asked to investigate the possibilities of developing an online 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) Using examples, outline the following:
 - i. The main processes the system should provide.
 - ii. The main data stores required.
(8 marks)

- c) Highlight the above proposed system by using the following techniques:
 - i. A level one data flow diagram.
(3 marks)
 - ii. An entity relationship diagram.
(3 marks)

A2.

- a) A feasibility study for the online ordering system needs to be provided to the supermarket company mentioned in question A1.

Outline the structure and contents of a feasibility report.
(12 marks)

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

- c) Describe how you would manage the development of the online ordering system mentioned in question A1.
(10 marks)

A3.

- a) What is the difference between data and information? Illustrate using examples.
(4 marks)
- b) Data can be stored and presented in many formats. Identify **six** different data types and provide examples of **each** which may be used in a large supermarket's business applications.
(6 marks)
- c) What is the purpose of database management systems and what facilities do they provide?
(12 marks)
- d) Briefly describe the characteristics of the following database systems:
- i. A relational database.
(4 marks)
 - ii. A NoSQL database.
(4 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)

[Turn Over]

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

B5.

a) What is meant by the following terms?

i. Stress testing.

(4 marks)

ii. Regression testing.

(4 marks)

iii. Black box testing.

(4 marks)

B6.

a) You have been asked to conduct a survey concerning the quality of data entered for a stock control system.

By using examples, discuss what type of data you would expect to collect with:

i. Open questions.

(6 marks)

ii. Closed questions.

(6 marks)

B7.

a) Discuss what is meant by the following RAD related terms:

i. Time boxing.

(4 marks)

ii. JRP.

(4 marks)

iii. JAD.

(4 marks)

B8.

a) Discuss what supporting documentation is required to produce an Entity Relationship Model (ERM) rather than an Entity Relationship Diagram (ERD).

(12 marks)

B9.

- a) What do you consider to be ethical behaviour when it comes to the role of a computing professional?
(4 marks)
- b) Discuss how you would ensure that all projects within an organisation were operated ethically.
(8 marks)

B10.

- a) Discuss what is meant by the term cloud database.
(4 marks)
- b) State **four** advantages to an organisation of using a cloud database.
(4 marks)
- c) State **four** disadvantages of using a cloud database.
(4 marks)

B11.

- a) State a type of multimedia that enhances a website and why.
(7 marks)
- b) With reference to the type of multimedia stated in part a), what are the disadvantages of using it?
(5 marks)

B12.

- a) Giving examples, describe what is meant by the following terms:
 - i. Operational data.
(4 marks)
 - ii. Strategic data.
(4 marks)
 - iii. Tactical data.
(4 marks)

END OF EXAMINATION