BCS THE CHARTERED INSTITUTE FOR IT

BCS HIGHER EDUCATION QUALIFICATIONS
BCS Level 4 Certificate in IT

INFORMATION SYSTEMS

Wednesday 8th October 2025 - 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 any <u>Section A</u> questions you attempt in <u>Answer Book A</u>
Answer any <u>Section B</u> questions you attempt in <u>Answer Book B</u>

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 team of doctors is opening a new clinic. They require a system to deal with registering patients, arranging and cancelling appointments for existing and new patients, and recording the discussions. Patient details will be recorded, and each patient is assigned a unique clinic number. Patients contact the receptionist to arrange or cancel an appointment. When the patient attends the appointment, they enter their clinic number and date of birth on a check-in screen. Confirmation will be displayed and the doctor and room number for the appointment displayed. After the appointment the doctor enters the details of the consultation and prescriptions provided.

    a) Using the above description:

        i. Draw a Context diagram

(4 marks)

        ii. Draw a High-Level Dataflow diagram

(10 marks)

    b) There are several methods for analysing systems. Describe the stages in the following, including techniques:

        i. A typical waterfall method

(10 marks)

        ii. A typical iterative method

(6 marks)

A2.

    a) Describe what should be included in a feasibility report and why those sections are important.

(12 marks)

    b) Discuss how you would manage a large information systems project which is estimated to take at least one year.

(10 marks)

    c) Discuss the types of business / end users that would assist your development team to develop a large project.

(8 marks)

A3.

The following is an example of a form used to manually record appointments.

Appointment Date	Appointment Time	Doctor No	Doctor Name	Room No	Patient Clinic No	Patient Name
01/08/26	10.00	D1	Dr Jones	1	123	Mrs Brown
	10.00	D2	Dr Chin	2	234	Mr Smith
	10.30	D1	Dr Jones	1	345	Miss Ball
02/08/26	10.00	D1	Dr Jones	1	234	Mr Smith
	10.00	D3	Dr Peters	3	123	Mrs Brown
	10.30	D2	Dr Chin	2	345	Miss Ball

a) Describe the three stages of normalisation to provide third normal form (3NF) and why it is so important to ensure data is in 3NF.

(10 marks)

b) Identify the normalised relations in the above form indicating primary and foreign keys.

(10 marks)

c) Draw an entity relationship diagram for the above scenario.

(10 marks)

A4.

a) When planning the final installation of a system, discuss how you would organise system testing and conversion of existing data.

(14 marks)

b) Briefly discuss the advantages and disadvantages of choosing a cloud-based storage solution rather than one that uses local storage:

    i.   Advantages

(6 marks)

    ii.   Disadvantages

(6 marks)

c) State the rules for ensuring that all passwords created are deemed to be strong.

(4 marks)

[Turn Over]

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

B5.

a) Define what is meant by the following cloud computing terms and what the potential benefits for a small computing company are:

i.   Infrastructure as a service

(4 marks)

ii.   Platform as a service

(4 marks)

iii. Software as a service

(4 marks)

B6.

a) Discuss software solutions that can be implemented to ensure that a visually impaired person can successfully use a web page.

(Focus only on software – there are no marks for discussing hardware related solutions.)

(12 marks)

B7.

a) Discuss, using examples, the advantages and disadvantages of closed and open questions in a questionnaire:

i.   Advantages

(6 marks)

ii.   Disadvantages

(6 marks)

B8.

a) With reference to use of an example and the type of information shown, illustrate:

i.   Pie charts

(4 marks)

ii.   Scatter charts

(4 marks)

iii. Bar charts

(4 marks)

B9.

a) Discuss methods of ensuring that a data centre is physically secure.

(12 marks)

B10.

a) With reference to the three management levels in an organisation, describe **each** level, providing examples of the decisions made, data and typical software used:

    i.   Operational management

(4 marks)

    ii.   Tactical management

(4 marks)

    iii.   Strategic management

(4 marks)

B11.

a) Define what is meant by the following terms:

    i.   Multimedia

(3 marks)

    ii.   Hypertext

(3 marks)

    iii.   Metadata

(3 marks)

    iv.   XML

(3 marks)

B12.

a) What is meant by the following software maintenance related terms?

    i.   Legacy system

(3 marks)

    ii.   Software bug

(3 marks)

    iii.   Version control

(3 marks)

    iv.   Software patch

(3 marks)

END OF EXAMINATION