BCS THE CHARTERED INSTITUTE FOR IT

BCS HIGHER EDUCATION QUALIFICATIONS
BCS Level 6 Professional Graduate Diploma in IT

IT AND THE ENVIRONMENT

Thursday 9th October 2025 – Afternoon

Answer **any** THREE questions out of FIVE. All questions carry equal marks.

Time: THREE hours

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 Section A questions in Answer Book A

A1.

   a) Define smart grid and smart meters and discuss their impact on the customers. Illustrate your answer with **three** examples.

            (15 marks)

   b) Discuss **two** examples of how IT contributes to maximising the use of renewable resources.

            (10 marks)

A2.

   a) Discuss the **two** benefits and **two** limitations of using cloud computing to support the provision of sustainable IT systems.

            (16 marks)

   b) Explain what IoT systems are and discuss **two** of their benefits.

            (9 marks)

A3.

   a) Identify **three** types of remote sensing and discuss the information that **each** one can provide.

            (15 marks)

   b) Discuss **one** example of how remote sensing is used to understand different environmental situations. In your answer, consider how remote sensing is used, how data is transmitted and how that data can be used.

            (10 marks)

Section B
Answer Section B questions in Answer Book B

B4.

You are developing an online course about 'Sustainable Information Technology' to provide continuing professional development for members of BCS, The Chartered Institute for IT.

a) Part of the course discusses the environmental impacts of a product's lifecycle. For the example of a desktop computer with a separate monitor and a laser printer, discuss what you would include to explain the environmental impacts of the following stages:

    i.   The manufacturing stage

(5 marks)

    ii.   The use stage

(4 marks)

    iii.   The disposal stage

(4 marks)

b) Another part of the course discusses what a company can do to have a sustainable approach to the use of IT equipment. The discussion is for a company that has laptops, desktop computers, monitors, network equipment and printers.

Discuss what you would include in the course to explain how 'Reduce, Reuse and Recycle' of the equipment can improve the company's environmental impact.

(12 marks)

[Turn Over]

B5.

Your IT Director has been informed that your organisation will need to report under European Union (EU) regulations for data centre operations.

Your organisation has its own on-premises data centre and uses colocation services as part of a disaster recovery strategy. Your organisation also uses cloud services.

Your data centre has a Data Centre Infrastructure Management (DCIM) tool. It provides all the information you need to report.

Your colocation data centre has asked your organisation for information on what they need to provide.

Your cloud provider has provided limited information based on financial spend.

After making the first report, your IT Director wants an energy efficiency and sustainability programme set up for all data centre services.

a) Describe **two** acts or directives from the EU that specify reporting regulations for data centres.

(5 marks)

b) The organisation will be required to report on Key Performance Indicators (KPIs).

Discuss **three** specific KPIs relevant for data centres and how these will help the organisation with its energy efficiency and sustainability programme.

(15 marks)

c) You have been asked to develop an energy efficiency and sustainability programme for the data centre. Identify **one** standards series or other EU energy efficiency guidance and describe how it can be used to develop the programme.

(5 marks)

END OF EXAMINATION