B5.

Your CEO has asked you to calculate the energy use of your ICT estate and to assist the rest of the organisation to calculate their Green House Gas (GHG) emissions.

a) Explain what steps you will take to calculate the total energy consumption of the ICT estate in terms of user devices, networking and the data centre servers?

(15 marks)

b) Describe the **three** GHG emission scopes and discuss what standards, tools and software the organisation could adopt to calculate the organisation's GHG emissions.

(10 marks)

END OF EXAMINATION

BCS THE CHARTERED INSTITUTE FOR IT

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BCS Level 6 Professional Graduate Diploma in IT

IT & THE ENVIRONMENT

Friday 4th October 2024 – Afternoon

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

Time: THREE hours

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 Section A questions in Answer Book A

A1.

a) Discuss what Smart Grid and Smart Meters are, and how they are helping end-users and energy companies to improve the supply and use of electricity.

(15 marks)

b) Internet of Things (IoT) systems have a significant impact on the environment, both in terms of potential benefits and challenges.

Define IoT in the context of the environment and discuss **two** environmental benefits and **two** environmental challenges of using IoT.

(10 marks)

A2.

a) The quality of data gathered using remote sensing depends on the issue of resolution. Explain what is meant by resolution in this context and describe **four** examples of resolution.

(15 marks)

b) Discuss how remote sensing can help organisations and scientists to monitor global sea surface temperatures. In your answer, outline the technologies that could be used and how the data is made available so that it can be used.

(10 marks)

Section B
Answer Section B questions in Answer Book B

B3.

a) Discuss **two** environmental impacts that arise from the manufacture and use of ICT.

(10 marks)

b) You work in an organisation that has a large amount of redundant IT equipment. Your sustainability and environmental manager has asked you to advise what steps can be taken to deal with this equipment.

Discuss the actions that you can adopt to deal with the items in a sustainable and environmentally friendly manner.

(15 marks)

B4.

The EU, USA and UK have recently implemented legislation that requires the collection of data centre environmental data which needs to be publicly reported.

a)
　　i. Discuss why the introduction of this legislation is important.

(6 marks)

　　ii. List **three** items of legislation that support the reporting requirement in the EU, USA or UK. This can be three items from one of those regions, or items from more than one region.

(6 marks)

b) Discuss examples of reporting requirements for **each** of the following areas for a Data Centre.

　　i. Energy consumption and sources.

(5 marks)

　　ii. Water.

(4 marks)

　　iii. Waste Heat.

(4 marks)

[Turn Over]