

BCS THE CHARTERED INSTITUTE FOR IT

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

IT AND THE ENVIRONMENT

Wednesday 18th September 2019 – Morning

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.

[Turn Over]

Section A
Answer Section A questions in Answer Book A

A1. You are the Head of IT for an insurance company, which is based in the UK. The company has decided to move to new offices on a retail park near a major city.

You have been asked to help develop the specification for the new building, which has yet to be constructed.

Discuss FIVE areas of the design which will help the organisation minimise the environmental impact of the new building and the IT operations within it. You should state any assumptions which you make. **(25 marks)**

A2. You are the Director of Information Services for a large finance company based in the UK. The senior management of the company has asked you to consider how the organisation can move towards a more environmentally sustainable model of operation.

a) In a report to the senior management, describe a framework or set of standards which the organisation could use as the basis of its environmental policy.

(13 marks)

b) Write a statement to staff, outlining the ways in which the adoption of a robust environmental policy will benefit the organisation, its customers and society in general. **(12 marks)**

[Turn Over]

Section B
Answer Section B questions in Answer Book B

- B3.** a) Describe the use of smart grid technology in allowing a power supply company to balance the use of fossil fuel, nuclear, and renewable (solar, wind, tidal and hydro) generators.

(15 marks)

- b) Discuss how smart home technology gives both information and control to the supply company, and potentially allows it to manage both supply and demand.

(10 marks)

- B4.** A large multinational organisation with thousands of office-based employees in over fifty countries across the world is considering a major change to its working methods.

The organisation's plans include:

- providing all employees with handheld and tablet devices, which will be replaced every two years;
- creating a private data centre to retain all the organisation's data and support its data processing;
- encouraging employees to work from home and to reduce long distance travel to meetings by at least 90%, by implementing teleconferencing facilities.

You have been employed to report on the potential environmental impacts of this change.

- a) List the main points you would include in your report, giving a brief description of the information you would present under each point.

(15 marks)

- b) After receiving your report, the organisation asks you to propose TWO changes to their plans which will have the most positive impact on the overall environmental impact. What changes would you propose and why?

(10 marks)

[Turn Over]

B5. A community has decided to construct a weather and air quality monitoring system which will provide warnings about future storms and heavy rainfall, and about human impacts such as air pollution.

The community is in a remote area and it does not have reliable communication links. Therefore, the plan is that the system will be totally self-contained within the community, no outside links are to be used.

a) Explain the main components of such a system, showing the way in which these components communicate with each other and with any centralised monitoring centre within the community. State any assumptions that you make.

(15 marks)

b) What additional benefits could be gained from adding data sources from outside the community, provided by wider network connectivity?

(10 marks)

End of Exam