

**BCS THE CHARTERED INSTITUTE FOR IT**

BCS HIGHER EDUCATION QUALIFICATIONS  
BCS Level 5 Diploma in IT

**SMART SYSTEMS**

Thursday 5<sup>th</sup> October 2023 - Afternoon

Answer **any** FOUR questions out of SIX. All questions carry equal marks.

Time: TWO 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) Define Smart Systems and discuss **THREE** of its characteristics. **(12 marks)**
- b) Identify and discuss the categories of AI used in the development of Intelligent and Smart Systems. **(13 marks)**

**A2.**

- a) Define what is meant by risk assessment. Include examples to illustrate your answer. **(9 marks)**
- b) List **THREE** risk assessment processes. Include examples to demonstrate your answer. **(16 marks)**

**A3.**

- a) Define Big Data and Data Analytics. Give a detailed discussion of their benefits. **(9 marks)**
- b) Identify the **FOUR** types of Data Analytics. **(16 marks)**

**Section B**  
**Answer Section B questions in Answer Book B**

**B4.**

- a) Describe the **THREE** Cyber Physical Systems layers. **(15 marks)**
- b) Describe the use of the different practices and technologies when maintaining the security of Operational Technology (OT) and the security of Information Technology (IT). **(10 marks)**

**B5.**

- a) Define and Discuss Internet of Things (IoT) technology and Smart Home with examples. **(15 marks)**
- b) Give **FIVE** advantages and **FIVE** disadvantages of Smart Home. **(10 marks)**

**B6.**

- a) Define Cloud Computing technology and discuss the characteristics and uses of the three service types. **(15 marks)**
- b) Describe the advantages and disadvantages of Cloud Computing technology. **(10 marks)**

**END OF EXAMINATION**