

BCS THE CHARTERED INSTITUTE FOR IT

BCS HIGHER EDUCATION QUALIFICATIONS
BCS Level 5 Diploma in IT

WEB APPLICATION DEVELOPMENT

Friday 7th May 2021 - Morning

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) Describe the GET, HEAD, POST and PUT methods in the Hypertext Transfer Protocol (HTTP).
(8 marks)
 - b) State **FIVE** differences between HTTP and Hypertext Transfer Protocol Secure (HTTPS).
(10 marks)
 - c) List **SEVEN** web application security risks.
(7 marks)
- A2.**
- a) Give descriptions of the following two software development methods:
 - i. Kanban;
 - ii. Scrum.**(20 marks)**
 - b) List **FIVE** potential advantages of using Scrum and/or Kanban as part of a web application development process.
(5 marks)
- A3.**
- a) Give a brief description of **EIGHT** common testing methods used in the development of web applications.
(16 marks)
 - b) Discuss the importance of using a testing framework. Give examples of the use of a testing framework when developing web applications.
(9 marks)

Section B
Answer Section B questions in Answer Book B

- B4.**
- a) Describe the group of web technologies known as AJAX. How does AJAX differ from a conventional web application? Include a diagram of the client-server interaction to illustrate your answer.
(10 marks)
 - b) Discuss **FIVE** drawbacks of the AJAX model.
(15 marks)
- B5.**
- a) Describe **THREE** principal differences between SQL and NOSQL databases.
(10 marks)
 - b) Explain how you would decide which type of database system would be appropriate for a given web-based application.
(15 marks)
- B6.**
- a) List the **FOUR** principles that form the Web Content Accessibility Guidelines (WCAG) 2.1.
(5 marks)
 - b) Discuss **EACH** of these principles, together with the guidelines which developers use to test a web sites compliance to WCAG.
(20 marks)

END OF EXAMINATION