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 <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) 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