

**BCS THE CHARTERED INSTITUTE FOR IT**  
**BCS HIGHER EDUCATION QUALIFICATIONS**  
**BCS Level 5 Diploma in IT**

**WEB APPLICATION DEVELOPMENT**

Thursday 7<sup>th</sup> October 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 <b>NOT</b> allowed in this examination.
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**Section A**  
**Answer Section A questions in Answer Book A**

**A1.**

a) Define the following terms:

- i) Web servers;
- ii) Application servers;
- iii) Mobile web.

**(15 marks)**

b) Describe **FIVE** features that could be built into an application to make it suitable for the mobile web.

**(10 marks)**

**A2.**

a) Explain the term 'version control'.

**(5 marks)**

b) Outline **FIVE** advantages of the use of version control in web application development.

**(10 marks)**

c) Describe the features of a version control system with which you are familiar.

**(10 marks)**

**A3.**

a) Outline **FIVE** common security problems found in web applications.

**(15 marks)**

b) Describe solutions to the problems you identified in your answer to part a).

**(10 marks)**

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

**B4.**

a) Describe the principal architectural features of back-end technologies in the context of web applications.

**(10 marks)**

b) Compare the architecture of a 'REST API' with an 'event driven API'.

Illustrate your answer with suitable examples.

**(15 marks)**

**B5.**

a) What is a CSS pre-processor and why would you use one when developing a web application?

**(10 marks)**

b) Describe **THREE** key features of CSS pre-processors that help you develop web applications more rapidly.

**(15 marks)**

**B6.**

a) Explain the purpose of Information Security Management (ISO 27001 & ISO 27002) and Privacy Information Management (ISO 27701), and why both are important when developing web applications.

**(15 marks)**

b) Explain:

i) How ISO 27701 and the European Union's General Data Protection Regulation (GDPR) differ in their approaches.

ii) How this might affect web application development.

iii) Why it is necessary for all web developers to understand these differences.

**(10 marks)**

**Exam of Examination**