

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

**B4.**

- a) Explain the difference between SQL and NoSQL databases with examples of where each are the most appropriate to use.  
**(10 marks)**
- b) Evaluate the difference between ACID and eventually consistent transactions, giving examples of where the use of each is appropriate.  
**(15 marks)**

**B5.**

- a) What is meant by Web Analytics and why is it important in maintaining the health of a website?  
**(10 marks)**
- b) What is meant by on-site and off-site analytics? Assess the metrics that each analyses and indicate their most appropriate use.  
**(15 marks)**

**B6.**

- a) Explain the difference between front-end and back-end technologies.  
**(6 marks)**
- b) Describe the **THREE** major parts of a back-end application.  
**(9 marks)**
- c) Discuss the criteria that you would use to evaluate which back-end framework to adopt when starting a new project.  
**(10 marks)**

**END OF EXAMINATION**

**BCS THE CHARTERED INSTITUTE FOR IT**

BCS HIGHER EDUCATION QUALIFICATIONS  
BCS Level 5 Diploma in IT

**WEB APPLICATION DEVELOPMENT**

Thursday 5<sup>th</sup> October 2023 - 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.
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**Section A**  
**Answer Section A questions in Answer Book A**

**A1.**

- a) Explain the purpose of Document Object Model for web applications and list **FIVE** examples. **(10 marks)**
- b) Show how you would use the object-fit property to resize an image or video to fit in a container. **(5 marks)**
- c) For the following events state their meaning in HTML 5.
- i. onafterprint
  - ii. onbeforeprint
  - iii. onbeforeunload
  - iv. onerror
  - v. onhaschange
  - vi. onload
  - vii. onmessage
  - viii. onoffline
  - ix. ononline
  - x. onpagehide
- (10 marks)**

**A2.**

- a) Give **FOUR** steps for implementing Flux into web applications. **(4 marks)**
- b) Briefly list **FIVE** advantages of using Flux. **(5 marks)**
- c) Explain **THREE** differences between a web server and an application server. **(15 marks)**
- d) Give an example of how an application server is used in the real world. **(1 mark)**

**A3.** REACTJ is developed by Facebook to build FLUX based web applications.

- a) List **FIVE** benefits of using the React library. **(5 marks)**
- b) List **FIVE** popular websites that are powered by the React library. **(5 marks)**
- b) Explain what Stylus is in **THREE** sentences. **(5 marks)**
- c) Explain the basic stages of version control and list **THREE** version control tools. **(10 marks)**

**[Turn Over]**