WEB APPLICATION DEVELOPMENT

SAMPLE PAPER

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

Section B
Answer Section B questions in Answer Book B
Section A
Answer Section A questions in Answer Book A

A1.

a) Compare and contrast XML and JSON. (10 marks)

b) Explain why JSON gained popularity over XML in web application development? (5 marks)

c) Describe the MVC architecture. (10 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) Discuss the potential uses for JavaScript in front end web application development. (5 marks)

b) Describe the relationship between jQuery and JavaScript (5 marks)

c) Discuss the importance of a front end framework with which you are familiar in developing web applications (15 marks)
Section B

Answer Section B questions in Answer Book B

B4.

a) Describe at least **FOUR** of the main goals and benefits of a service-oriented architecture.  
(10 marks)

b) How might a service oriented architecture concept be implemented using REST?  
(15 marks)

B5.

a) Explain the benefits of Test Driven Development (TDD)  
(10 marks)

b) Discuss the use of web analytics in the evaluation of a web-based application  
(15 marks)

B6.

a) List **FIVE** of the OWASP top ten security issues.  
(5 marks)

b) Choose **ONE** of the issues you gave as an answer to part a) and give a detailed description of it.  
(5 marks)

c) Describe threat modeling and explain why it is one of the most important steps in developing secure web applications.  
(15 marks)

END OF EXAMINATION