

BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE AND ENGINEERING

COMPUTER SCIENCE DEPARTMENT

BSc HONOURS DEGREE IN INFORMATION TECHNOLOGY/ SOFTWARE ENGINEERING

SWE404 - SOFTWARE TESTING AND QUALITY ASSURANCE

2 ½ HOURS

INSTRUCTION TO CANDIDATES

NOV 2024

This paper carries five (5) questions. Answer ALL.

Marks are indicated in brackets at the end of each question. Total marks are 100.

Question 1

Explain the following:

- (a) Regression Testing. [4]
- (b) Quality Assurance vs. Quality Control. [6]
- (c) Unit Testing vs. Integration Testing. [6]
- (d) Boundary value analysis. [4]

Question 2

Explain how the Capability Maturity Model Integration (CMMI) model can be used to assess and improve the software development and quality assurance processes within an organisation. [20]

Question 3

You have been asked to implement a test automation framework for a web application. Discuss the factors you would consider when selecting a test automation tool, and explain the key components of a typical test automation framework. [20]

Question 4

- (a) Explain the role of code reviews and inspections in software quality assurance. [10]
- (b) Describe the best practices for conducting effective code reviews. [10]

Question 5

Explain the different types of security tests and the techniques used to identify security vulnerabilities in software applications. [20]

****END OF PAPER****