



ZIMBABWE EZEKIEL GUTI UNIVERSITY

**FACULTY OF SCIENCE, TECHNOLOGY, AGRICULTURE AND FOOD
SYSTEMS DEVELOPMENT**

INFORMATION SYSTEMS DEPARTMENT

EXAMINATION PAPER

COURSE CODE : BIS122
COURSE TITLE : Software Engineering
DURATION : 3 Hours
LEVEL : 1.2
DATE : 2024

11 JUN 2024

INSTRUCTIONS TO CANDIDATES:

1. Answer any four questions only.
2. Each question carries 25 Marks.

Question 1

- a. What are the differences between verification and validation in software development?
[7 marks]
- b. Define the meaning of quality assurance. Explain the role of testing in Quality assurance.
[8 marks]
- c. Discuss prototyping using reusable components and suggest problems which may arise using this approach. What is the most effective way to specify reusable components.

[10 marks]

Question 2

- i) Identify the shortcomings of the waterfall model. [6 marks]
- ii) Explain the following terms and also explain the testing techniques that are used for each term
Verification
Validation [6 marks]
- iii) Explain the difference between the spiral and the incremental model. [8 marks]

Question 3

- a. Using your own knowledge of how an ATM is used, develop a set of use cases that could be used to derive the requirements for an ATM system. [15 marks]
- b. Discuss the importance of requirements validation? What is the impact if this process is not well conducted? [10 marks]

Question 4

- a. Describe the strengths and weaknesses of the requirements validation techniques: requirements reviews, prototyping, test-case generation and automated consistency analysis? [15 marks]
- b. How are user requirements defined? Are there any problems that can arise during this process? [10 marks]

Question 5

- a. What are the four important attributes which all software products should have?
[4 marks]
- b. Discuss the problems and challenges that software engineering has to face in the 21st century? [15 marks]
- c. Why does prototyping so essential as part of user interface design process? [6 marks]

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