AFRICA UNIVERSITY

(A United Methodist-Related Institution)

"Investing in Africa's Future"

COLLEGE OF ENGINEERING AND APPLIED SCIENCES

NCIS212– SOFTWARE ENGINEERING

First SEMESTER: FINAL EXAMINATION NOVEMBER 2024

LECTURER: MR J. CHINZVENDE

DURATION: 3 HOURS

INSTRUCTIONS

Answer questions instructed in each section

Start **each** question on a new page.

The marks allocated to **each** question are shown at the end of the section.

Answer all questions in Section A and Chose THREE in section B

Credit will be awarded for logical, systematic and neat presentations.

Section A [Answer all]

Question One

Define the following terms as they are used in Software engineering

a. Usability
b. Reliability
c. Scalability
d. Availability
e. Maintainability   **[10]**

Question Two
Complete the following abbreviations as they are used in Software Engineering?

   a. JAD
   b. SQL
   c. IEEE
   d. UML
   e. COCOMO   **[10]**

Question Three

What are the characteristics to be considered for the selection of life cycle model on System Analysis and Design: **[10]**

Question Four

You are tasked with explaining the concept of software to a non-technical audience. How would you describe what software is and its importance in modern technology?. Provide examples of different types of software and their applications in everyday life.
                                                                      [10]

SECTION B [Answer any 3]

Answer any three questions from this Section

Question Five

A software development team is working on a project that involves integrating multiple third-party APIs into their software system. The team is facing challenges in understanding and implementing the APIs effectively. Suggest techniques and best practices from software engineering to help the team overcome these challenges and ensure successful integration. **[20]**

Question Six

You have joined a small software development team. Your colleague has told you that the team will be following an iterative/incremental development life cycle, and that the next project will have one analysis iteration followed by a design iteration and finally two construction iterations. The first construction iteration is likely to produce software with many bugs, but these will be fixed in the second construction iteration.
i) Discuss your colleague's misunderstandings about iterative development.
ii) Describe TWO potential disadvantages of incremental delivery. **[20]**

Question Seven

 You are tasked with creating documentation for a software project that involves developing a mobile application. Develop a documentation plan outlining the types of documents to be created the target audience for each document, and the timeline for completion. **[20]**

Question Eight

You are part of a software development team facing pressure to meet tight deadlines by cutting corners in the testing process. Discuss the ethical implications of compromising on testing quality and how you would advocate for maintaining high standards of software quality and reliability within the team. **[20]**

End of paper