**COPERATIVE UNIVERSITY OF KENYA**

Institute of Computing and Informatics

Department of Computer Science & Information technology

**UNIVERSITY EXAMINATION FOR:**

bDAT/BCS 2.2

BCIT 2204: SOFTWARE ENGINEERING

END OF SEMESTER EXAMINATION 1

**SERIES: APRILC 2025**

**TIME:**2HOURS

**DATE:**Pick DateNov2022

**Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of five questions. Attemptquestion ONE (Compulsory) and any other TWO questions.

**Do not write on the question paper.**

# QUESTION ONE [30 Marks]

1. **List four components typically included in a Project Management Plan [4 Marks]**

### Describe how software engineering principles can improve user satisfaction in a mobile banking application.

[4 Marks]

1. **Briefly describe the Agile software development methodology. [4 Marks].**

### Explain why Waterfall methodology might be less effective for projects with frequently changing requirements. [4 Marks]

1. Explain the role of the Work Breakdown Structure (WBS) in project planning [4 Marks]
2. Explain why modularity is important in software engineering. [4 Marks].
3. Imagine you are tasked with developing a testing plan for a new mobile app. List the types of testing you would include and briefly describe their purpose. [8 Marks].

# QUESTION 2[20 Marks]

1. **Explain why a developer might choose Waterfall over Agile for a government contract project [5 Marks]**
2. **Explain the** role of version control in a collaborative software development environment [5 Marks].
3. **Describe the suitability of Agile for a large-scale project with multiple teams. [5 Marks]**
4. Describe a scenario where requirements engineering could prevent software project failure [5 Marks]

# QUESTION 3[20 Marks]

* 1. **Explain the purpose of a Risk Register and provide two examples of risks in software development projects. [4 Marks]**
  2. **Explain how** software requirements can inform the System Design phase. [6 Marks]
  3. **Using a table, describe five key deliverables for each of the following phases of the Software Project Lifecycle. [10 Marks]**

# Question 4[20 Marks]

1. Given a scenario where stakeholders have differing opinions on a system feature, which technique would you use to gather their requirements effectively? Justify your choice. [5 Marks]
2. **Describe** the impact of poor coding standards on software quality and team productivity. [5 Marks]
3. Design a strategy for integrating CASE tools into a software development project to improve its efficiency.

[6 Marks]

1. Explain the significance of Risk Assessment and Management in software engineering. [4 Marks]

# Question 5[20 Marks]

1. Analyze the advantages and challenges of using surveys for requirement gathering [4 Marks].
2. Analyze the benefits of modularization in the context of software re-engineering. [5 Marks]
3. Propose how requirements should be managed during the Maintenance phase to ensure system relevance.

[5 Marks]

1. Evaluate the effectiveness of prototyping in the requirements gathering process. What are its strengths and weaknesses? [6 Marks]