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KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2024/2025 ACADEMIC YEAR
FIRST YEAR, FIRST SEMESTER EXAMINATION
FOR THE DIPLOMA IN SOFTWARE ENGINEERING
DSE 1002: SOFTWARE QUALITY ASSURANCE

DATE: 9TH DECEMBER, 2024

TIME: 11:30AM – 1:30 PM

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE: COMPULSORY (30 MARKS)

- a) A startup company is building a ride-sharing app. They want to integrate Software Quality Assurance (SQA) into their development process. What are the key benefits of integrating SQA from the beginning phase of the ride-sharing app? **[5 Marks]**
- b) Your team is testing an e-commerce website. How would you apply black-box testing to validate the search functionality of the e-commerce website? **[4 Marks]**
- c) A banking app needs a test plan for its fund transfer feature. What are the main components of the test plan to be included in a banking app? **[5 Marks]**
- d) A team is developing an e-learning platform. It features video courses, quizzes, and user profiles.
 - i) What role does SQA play in ensuring the e-learning platform meets user expectations? **[4 Marks]**
 - ii) Suggest a tool for regression testing in the e-learning platform and justify your choice. **[4 Marks]**
 - iii) What vulnerabilities would you address in the user registration module of the e-learning platform? **[4 Marks]**
- e) How would you incorporate Artificial Intelligence and machine learning into the testing process for a cloud collaboration tool? **[4 Marks]**

QUESTION TWO: [20 MARKS]

- a) You are manually testing a learning management system's course enrollment feature. How would you document the test case of the enrollment feature? **[12 Marks]**
- b) Your team is automating the login feature of a mobile application. Which tool would you use, and how would you design the script of the login feature? **[8 Marks]**

QUESTION THREE: [20 MARKS]

- a) Explain how you would design a load test for a video streaming platform **[10 Marks]**
- b) Explain the essential components of a test summary report for a student management application? **[10 Marks]**

QUESTION FOUR: [20 MARKS]

- a) Your team is performing security testing for an online banking app. What vulnerabilities should you test, and how? **[10 Marks]**
- b) What metrics would you track to measure the effectiveness of Software Quality Assurance in a logistics management system? **[10 Marks]**

QUESTION FIVE: [20 MARKS]

- a) Explain steps you would take to integrate Software Quality Assurance into the System Development Lifecycle of a social media app? **[12 Marks]**
- b) Explain how you would conduct penetration testing for an e-commerce platform? **[8 Marks]**