Kasarani Campus

Off Thika Road
Tel. 2042692 / 3

P.

O. Box 49274, 00100

NAIROBI

Westlands Campus
Pamstech House
Woodvale Grove
Tel. 4442212
Fax: 4444175

KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2023/2024 ACADEMIC YEAR
END SEMESTER EXAMINATION
FOR THE BACHELOR OF SCIENCE IN COMPUTER SCIENCE
KCS 405 – ADVANCED SOFTWARE ENGINEERING

Date: 15TH AUGUST 2023
Time: 2:30PM – 4:30PM

INSTRUCTIONS TO CANDIDATES
ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)
a) Differentiate between software engineering and system engineering (2 Marks)
b) Explain the issues that led to the 'software crisis' (8 Marks)
c) Describe 5 characteristics of a well-engineered software. (5 Marks)
d) Describe three generic team organizations. (6 Marks)
e) Discuss 5 software engineering principles. (5 Marks)
f) Give two different techniques that would be suitable for eliciting requirements for a ticket booking system for a large, international event such as the World Cup. Give reasons for your choices. (4 Marks)

QUESTION TWO (20 MARKS)
A senior director of a software engineering organization is criticizing the amount of money their company is spending on project management and their Computers Aided Software Engineering (CASE) tools. However, the project managers have managed to get the company to CMM (Capability Maturity level five. Write a report for this senior director explaining the following:
(a) The purpose of project managers within software engineering projects. (4 Marks)
(b) The tasks projects managers are likely to undertake. (5 Marks)
(c) Why the CASE tools are important. (5 Marks)
(d) What does CMM level five mean, and why this is of value to the company. (6 Marks)

QUESTION THREE (20 MARKS)

a) Describe briefly four software testing strategies (4 Marks)
b) Explain the four major aspects which project management focuses on. (8 Marks)
c) Explain four factors that may influence the results of a project. (8 Marks)

QUESTION FOUR (20 MARKS)

a) Most software development projects these days involve some form of reuse. Describe the advantages and disadvantages of reuse in software engineering projects (5 Marks)
b) Describe one form of re-use, and how it would be used in practice. (10 Marks)
c) Describe in detail the waterfall software engineering model (5 Marks)

QUESTION FIVE (20 MARKS)

a)   Assume you work for a company that develops software. Management has selected you to conduct a quality review on one of its products.

i) Outline the major steps you would use in setting up and holding a review   (10 Marks)

ii) Explain how software quality assurance is ensured in a software firm   (10 Marks)