

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF
SCIENCE IN APPLIED COMPUTER SCIENCE**

ACSC 434: SOFTWARE ENGINEERING II

**STREAMS: Y4S1
HOURS**

TIME:2

**DAY/DATE: WEDNESDAY 4/12/2019
– 4.30 P.M**

2.30 P.M

INSTRUCTIONS:

QUESTION ONE (30 MARKS)

- (a) Explain the difference between white box testing and black box testing methodologies. (3 marks)
- (b) Explain how you would minimize components recompilation during system building. (3 marks)
- (c) Explain the difference between reverse engineering and forward engineering. (4 marks)
- (d) Explain two reasons why the software quality management team should be different from the development team. (4 marks)
- (e) Discuss the differences between refactoring and system re-engineering. (4 marks)
- (f) Discuss the differences between thin-client architecture and fat-client architecture models of client server models. (4 marks)
- (g) Every software system ought to be dependable. Discuss. (4 marks)
- (h) Suppose a customer has proposed a change in a currently working program, discuss how you would go about approving or disapproving the proposed changes. (4 marks)

QUESTION TWO (20 MARKS)

- (a) In your new placement as an intern, you are assigned project leader's role. Discuss three activities you would consider in configuration management for the software project assigned. (6 marks)
- (b) Discuss six advantages accrued from the use of CASE tools in software development activities. (6 marks)
- (c) Discuss four problems associated with the measurements in the software industry. (8 marks)

QUESTION THREE (20 MARKS)

- (a) Suppose your company has embarked on developing distributed applications for the business enterprise. Explain three key design issues that must be considered in development of a distributed software engineering. (6 marks)
- (b) Change is inevitable for any real-world software system. Explain three reasons why a software system must change with time or become progressively less useful. (6 marks)
- (c) Discuss the process of change implementation. (8 marks)

QUESTION FOUR (20 MARKS)

- (a) Discuss four types of attacks that a distributed system should guard against. Suggest measures for dealing with each attack. (8 marks)
- (b) Suppose in your software company, you are involved in developing both centralized and distributed software systems. Both of these systems have one property in common "they must be dependable". Explain the six attributes that will prove that your systems are dependable. (12 marks)

QUESTION FIVE (20 MARKS)

- (a) Discuss two advantages of developing distributed application software in layers. (4 marks)
- (b) Imagine you are implementing a software-based control system. Discuss three circumstances in which it would be appropriate to use a fault-tolerant architecture. (6 marks)

- (c) In secure systems programming, discuss five good practice guidelines for developing secure and safe systems. (10 marks)
-