

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**FOURTH YEAR SEMESTER TWO EXAMINATION FOR BACHELOR
OF SCIENCE IN APPLIED COMPUTER SCIENCE**

ACSC 333: SOFTWARE ENGINEERING I

STREAMS: BSC (APPLIED COMP. SCI) Y3S2

TIME: 2 HOURS

DAY/DATE: THURSDAY 11/4/2019

2.30 P.M. – 4.30 P.M.

INSTRUCTIONS: Answer Question One and any other two questions

Question One (30 marks)

- (a) Explain one reason why people are the most important resource in software project management. (2 marks)
- (b) Explain the two major reasons of testing software. (4 marks)
- (c) Explain four general software testing guidelines for an online banking system. (4 marks)
- (d) Distinguish between functional requirements and non-functional requirements. (4 marks)
- (e) Discuss two major advantages of agile methodologies over the waterfall model of software development. (4 marks)
- (f) Explain four reasons why software maintenance is a compulsory phase for every software in use. (4 marks)
- (g) Discuss four project scheduling activities for a large software project. (4 marks)
- (h) Explain two reasons why project planning is an iterative process. (4 marks)

Question Two (20 marks)

- (a) Explain the difference between refactoring and reengineering activities in a software project. (4 marks)
- (b) Given that software development is an intangible project, explain four challenges of tasks scheduling in a software project. (8 marks)
- (c) Estimating the cost of a software project is inherently a risky task, irrespective of the technique being used. Suggest and explain four ways in which the risk in cost estimation can be reduced. (8 marks)

Question Three (20 marks)

- (a) Software products ought to be dependable and secure. Discuss two reasons in support of this statement. (4 marks)
- (b) In the event of managing a software product, some serious risks are found to have occurred and threaten to bring the project to a halt. As a software engineer expert, explain the four activities you would engage in to ensure risks of any nature will not bring down a project. (8 marks)
- (c) Suppose you are working for a software development company that develops software products emerging technologies in ecommerce. Explain the four phases that the company will be involved in to realize a working software product for company XYZ. (8 marks)

Question Four (20 marks)

- (a) Explain the difference between white box testing and black box testing methodologies. (4 marks)
- (b) Discuss the three types of maintenance activities expected of students' management system and a banking software system. (6 marks)
- (c) Chuka university students' management system was developed using a combination of plan-based and agile methodologies. Explain five reasons why many software development companies and their prospective client will advocate for this hybrid approach. (10 marks)

Question Five (20 marks)

- (a) Software inspections are often taken seriously as a complementary measure to software testing. Discuss. (4 marks)

- (b) Explain the importance of the following software testing approaches. (6 marks)
- (i) Regression testing
 - (ii) Integration testing
 - (iii) Beta testing
- (c) In your recent trip to Mombasa using “Madaraka Express” train, you realized there was need for the train management to provide an online booking system. As a software development expert, develop four user requirements the clients may suggest. From those four user requirements, develop system requirements. (10 marks)
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