

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

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

ACSC 333: SOFTWARE ENGINEERING I

STREAMS: BSC (COMP SCI) Y3S2

TIME: 2 HOURS

DAY/DATE: THURSDAY 16/04/2020

11.30 AM – 1.30 PM

INSTRUCTIONS:

Answer question one and any other two questions

Question One (30 marks)

- (a) Discuss why software project planning is an iterative process and why the plan must be reviewed continually during the project development. (3 marks)
- (b) Explain three major software maintenance activities in software evolution. (3 marks)
- (c) Briefly, explain the four activities in risk management. (4 marks)
- (d) Explain the two motivations of carrying out program testing. (4 marks)
- (e) Explain four software quality attributes of an online banking software system from the client's perspective. (4 marks)
- (f) Software requirements can be classified as either functional or non-functional requirements. Explain the difference between the two. (4 marks)
- (g) Explain why plan – driven development approach is ideal for large complex software projects especially where developers are far from each other. (4 marks)
- (h) Explain four general software testing guidelines for an online banking system. (4 marks)

Question Two (20 marks)

- (a) In the assessment of a university environment, generate two user functional requirements and two system functional requirements for a student management system for Chuka University. (4 marks)

(b) The first phase in software development is requirements definition. In this phase there are several activities involved. For either a small project or large project, explain the importance of this phase and the activities involved. (8 marks)

(c) Describe what software prototyping is and its benefits as a software development process. (8 marks)

Question Three (20 marks)

(a) Discuss the contribution and the relative value of dividing a project into short development episodes. (4 marks)

(b) Software development is considered a teamwork activity. As such, software developers are organized into software development groups to facilitate teamwork. Explain four factors that would determine the effectiveness of group communications. (8 marks)

(c) Software pricing is usually a difficult task when bidding for a software project where there are many interested software companies. In an advisory role, explain four factors that you would consider so that you are successful in your company. (8 marks)

Question Four(20 marks)

(a) Discuss the importance of feasibility study in requirements gathering and analysis. (4 marks)

(b) Discuss four reuse levels for reuse based software development processes. (8 marks)

(c) Explain four problems of natural language in documenting software requirements. (8 marks)

Question Five (20 marks)

(a) Discuss the two program testing goals. (4 marks)

(b) Explain the difference between white box testing and black box testing. (4 marks)

(c) Briefly discuss test driven development process. (4 marks)

(d) Discuss the following software testing strategies: (8 marks)

- (i) unit testing
- (ii) regression testing
- (iii) user testing
- (iv) integration testing