



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2011/2012
SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE
SCS 421: SOFTWARE DEVELOPMENT II

DATE: **Wednesday 18th April 2012**

TIME: **11.00a.m -1.00p.m**

Instructions:

Answer question 1 any other two (2) questions.

Question 1.

- (a) (i) Give a brief explanation of the purpose of an application programmer interface (API). [2 Marks]
- (ii) Mention two of the available APIs. [2 Marks]
- iii) What are some of the design models for APIs. [2 Marks]
- (iv) Give two general policies that exist regarding publishing APIs. [4 Marks]
- (v) How are APIs implemented? [2 Marks]
- (vi) Why is it necessary to analyze API implementations? [2 Marks]
- (b) (i) Explain what a class browser is. [2 Marks]
- (ii) What are the three general categories that Modern class browsers fall into? [3 Marks]
- (iii) What is achieved by Refactoring Class Browsers? [2 Marks]
- (c) (i) What is Code reuse? [2 marks]
- (ii) Describe four Characteristics of Maintainable Code? [4 Marks]
- (d) State what you understand by: [3 Marks]
- general API
 - specific API
 - language-dependent API

Question 2.

- (a) The needs of software developers with respect to reusable components are represented by which global requirements? [3 Marks]
- (b) Describe the three main stages of the module-building process. [6 Marks]
- (c) Define a Software Component and state its Objectives [7 Marks]
- d) State two reasons why there is a lot of emphasis on software components. [4 marks]

Question 3.

- (a) Define Software prototyping and state three benefits of Prototyping. [5 Marks]
- (b) Describe the steps of the prototyping process. [7 Marks]
- (c)
 - (i) Discuss two advantages of prototyping.
 - (ii) Discuss four disadvantages of prototyping
 - (iii) Identify two scenarios that would be ideal for prototyping. [8 Marks]

Question 4.

- (a) Define Software quality and discuss any six software quality factors. [8 Marks]
- (b) Discuss the following aspects of object oriented design goals. [6 Marks]
 - i. Robustness
 - ii. Adaptability
 - iii. Reusability
- (c) Discuss the following aspects of object oriented design principles. [6 Marks]
 - Abstraction
 - Encapsulation
 - Modularity

Question 5

- (a) Define software maintenance and describe the three type of software maintenance. [6 Marks]
- (b) During the development process, a software product may be designed, created and tested and will result in a software product ready to be sold to the customer. List and describe at least five deliverables of the process. [10 marks]
- (c) Define software component and explain how Software components may be used by various mechanisms. [4 Marks]