SOUTH EASTERN KENYA UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN BACHELOR OF PROCUREMENT AND SUPPLY CHAIN MANAGEMENT

SCI 201: SYSTEMS ANALYSIS AND DESIGN
(Kitui Campus & Machakos)

DATE: 10ᵀᴴ APRIL, 2017   **TIME: 8.00 -10.00 AM**

Answer question **one** and **any other two** questions

Question one

1. Explain the following terms: [5 marks]

   a) Object
   b) Encapsulation
   c) UML (Unified Modeling Language)
   d) Use case
   e) Sequence diagram

2. Discuss Five benefits of object-oriented Modeling approach   [5 marks]
3. With aid of a well labeled diagrams distinguish the following: [6 marks]
   a) Objects and classes
   b) Aggregation and composition
   c) Use case and actors

4. A student is responsible for many schedules. He can as well do without any schedule. With use of diagrams, illustrate 'has a' relationship between two classes. Include possible multiplicities while restricting navigation to a single direction. [4 marks]

5. Outline the three major access control methods in object-oriented programming language. [3 Marks]

6. What is the purpose of the design phase being graphic intensive activity? [2 Marks]

7. Briefly, explain Five the characteristics of a good design [5 Marks]

Question 2

a. Differentiate between overloading and overriding [4 marks]

b. Using a sketch, describe three types of degree of relationships in objects designing [6 Marks]

c. A business entity has one contact point from where it receives and sends messages. Various modes of communication medium are used namely: E-mails and surface address which are parts of shipping address contacts. Besides shipping address, the business entity uses phone as part of contact point. The contact point is described by contact point type class. Draw a class diagram that communicates this scenario. [10 Marks]

Question 3

a. State the importance of using sequence diagrams in modeling an information system [2 Marks]

b. Briefly, explain the goals of use of CASE tools in analysis and design [8 marks]

c. Consider the given case scenario and draw a sequence diagram that communicates the case [10 Marks]
A customer wants to search for a particular author from a search page and specifies the author and presses on a search button. The system validates the customers search criteria and searches the catalogue. When the search is complete, the system displays search results on search results page. If the customer did not enter the name of author before pressing the search button, the system displays error message that prompts the customer to re-enter author's name.

Question 4

    a. Why is class preferred over object during system modeling   [2 Marks]

    b. Describe some of the Problems encountered by a systems analyst   [5 Marks]

    c. Explain the benefits of using objects in system development   [4 Marks]

    d. Highlight on the importance of using use cases in analysis and design   [3 Marks]

    e. Describe the activities that are carried out during system analysis stage   [6 Marks]