



MACHAKOS UNIVERSITY

University Examinations for 2016/2017

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

**THIRD YEAR FIRST SEMESTER EXAMINATION FOR BACHELOR OF SCIENCE IN
COMPUTER SCIENCE**

SCO 310: COMPONENT PROGRAMMING

DATE:

TIME:

INSTRUCTIONS

Answer Question ONE and ANY other TWO questions

QUESTION ONE (COMPULSORY)

- a) With the help of examples, define the following terminologies (5 marks)
- i. Software Component
 - ii. Architecture
 - iii. Model
 - iv. Interface
 - v. Framework
- b) Highlight any five characteristics of software components, giving a brief explanation of each characteristic (5 marks)
- c) Imagine that you have been given a software component that is not generally reusable and have been asked to make it more reusable. List any five ways you would make it more reusable. (5 marks)
- d) In the attempting to make components more reusable, component interface incompatibility may result. Explain the three types of component interface incompatibility. (5 marks)

QUESTION TWO (20 MARKS)

- a) What is Enterprise Java Beans? (2 marks)
- b) State any three roles of J2EE (3 marks)
- c) Using a diagram, explain a message-driven bean. (7 marks)
- d) With the aid of a diagram, explain a multi-layer architecture with three orders (8 marks)

QUESTION THREE (20 MARKS)

- a) What is CORBA? (3 marks)
- b) Draw a diagram showing how CORBA object management occurs (6 marks)
- c) Giving examples, explain the difference between Requires Interface and Provides interface of a component. Use an illustration (8 marks)
- d) What is the role of the object request broker (ORB)? (3 marks)

QUESTION FOUR (20 MARKS)

- a) Define .NET framework. (2 marks)
- b) Using a diagram, describe the .NET platform (7 marks)
- c) Identify three technical targets for the .NET platform target (3 marks)
- d) Briefly, explain any four benefits of components (8 marks)

QUESTION FIVE (20 MARKS)

- a) Different between event sources and event sinks in regards to CCM components (4 marks)
- b) Explain any 3 differences between Component Oriented Programming and Object Oriented Programming (6 marks)
- c) With the aid of a diagram and two examples, describe a component model (10 marks)