MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)
University Examinations for 2015/2016 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

SECOND SEMESTER EXAMINATION FOR DEGREE IN BACHELOR OF SCIENCE IN COMPUTER SCIENCE

SIT 300: COMPONENT PROGRAMMING

Date: 1/8/2016 **Time: 8:30 – 10:30 AM**

INSTRUCTIONS

Answer **question ONE and any other TWO questions**

QUESTION ONE (30 MARKS)

a) Explain Component Oriented Programming and its three major objectives. (3 marks)

b) Discuss four importance of Component Oriented Programming. (4 marks)

c) Explain components and their characteristics. (3 marks)

d) Distinguish between hardware components and software components. (3 marks)

e) Investigate the differences between Object Oriented Programming and Component Oriented Programming. (3 marks)

f) Describe component-based software engineering. (3 marks)

g) Discuss principles of Component Oriented Programming and its major features. (4 marks)

h) Investigate the infrastructures ofComponent Oriented Programming technologies (3 marks)

i) Describe a framework to unify various component technologies. (4 marks)

QUESTION TWO (20 MARKS)

a) Describe an overview of JavaBeans technology. (4 marks)

b) Discuss the component infrastructure of JavaBeans. (4 marks)

c) Explain the component model of JavaBeans. (4 marks)

d) Explain the difference between JavaBean and EJB. (4 marks)

e) Describe the role of introspection in JavaBean. (4 marks)

QUESTION THREE (20 MARKS)

a) What is .NET Framework?Describe three applications of. NET Framework. (4 marks)

b) Describe threemain components of .NET Framework. (4 marks)

c) Explain the role of Common Type System (CTS) in .NET Framework. (4 marks)

d) Describe four roles of CLR in .NET Framework. (4 marks)

e) Give a brief introduction on side-by-side execution. Can two applications, one using private assembly and the other using the shared assembly be stated as side-by-side executables? (4 marks)

QUESTION FOUR (20 MARKS)

a) Explain four CORBA Components. (4 marks)

b) Explain what Common Object Request Broker Architecture (CORBA) is. (4 marks)

c) Explain CORBA reference model. (4 marks)

d) Explain CORBA architecture. (4 marks)

e) Identify the functions of Object Request Broker (ORB). (4 marks)

QUESTION FIVE (20 MARKS)

a) What are Web Services? (3 marks)

b) Describe the benefits of using Web Services. (3 marks)

c) Explain the following: (8 marks)

i. XML-RPC
ii. SOAP
iii. WSDL
iv. UDDI

d) Analyze the following scenario: Consider a simple account-management and order processing system. The accounting personnel use a client application built with Visual Basic or JSP to create new accounts and enter new customer orders. The processing logic for this system is written in Java and resides on a Solaris machine, which also interacts with a database to store information. Use the scenario and explain how a web service works. (6 marks)