

MACHAKOS UNIVERSITY
UNIVERSITY EXAMINATIONS 2017 / 2018
YEAR 3 SEMESTER x EXAMINATION FOR THE DEGREE OF BACHELOR
OF SCIENCE IN INFORMATION TECHNOLOGY
SIT300: COMPONENT PROGRAMMING

QUESTION 1 (COMPULSORY)

- a) With the help of examples, define the following terminologies [10 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 [10 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 go this [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 2

- a) What is EJB? [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 3

- 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 4

- 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 5

- a) Different between a vent 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]