

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF
SCIENCE IN COMPUTER SCIENCE**

COSC 434: COMPONENT BASED ARCHITECTURES

STREAMS: COMP SCI. Y4S1

TIME: 2 HOURS

DAY/DATE: TUESDAY 21/09/2021

8.30 A.M. – 10.30 A.M.

SECTION A: Answer all questions in this section

QUESTION ONE (30 Marks)

- a) Differentiate between SOAP and WSDL as used in web services. **[6 Marks]**
- b) How do you describe the deployment model in a component infrastructure? **[4 Marks]**
- c) Discuss the strengths and weaknesses of UML as a modeling language to support the design of component-based software systems. **[6 Marks]**
- d) List different forms of components along with brief explanations. **[4 Marks]**
- e) Discuss the two kinds of developing activities in component-based software engineering? **[6 Marks]**
- f) Discuss reasons as to why Component-based software development increases the software dependability. **[4 Marks]**

SECTION B (Answer any TWO questions from this section)

Question Two [20 marks]

- a) Discuss what the events of a bean refers to. **[6 Marks]**
- b) What are the strength and limitations of JavaBeans? **[4 Marks]**
- c) Using a diagram, explain EJB component infrastructure. **[6 Marks]**

- d) Describe how does the EJB container work. **[4 Marks]**

Question Three [20 marks]

- a) Describe the communications between CCM CORBA components. **[6 Marks]**
- b) What is the difference between BOA and POA? **[4 Marks]**
- c) What is the difference between CLR and JVM? **[6 Marks]**
- d) What is the difference between MSIL and JAVA bytecode? **[6 Marks]**

Question Four [20 marks]

- a) Describe the OSGi component connection model. **[6 Marks]**
- b) Discuss why component-oriented programming with OSGi component technology requires more discipline on the part of programmers.
[6 Marks]
- c) Explain the following strategies as employed in component oriented programming. **[8 Marks]**
 - i. distributed processing
 - ii. artificial intelligence
 - iii. parallel processing
 - iv. divide and conquer

Question Five [20 marks]

- a) Describe the protocol stack for Web service. **[6 Marks]**
 - b) What is the difference between CORBA and Web service? **[6 Marks]**
 - c) List four port Types of Web service. **[8 Marks]**
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