

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)**

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

- Discuss what the events of a bean refers to. **[6 Marks]**
- What are the strength and limitations of JavaBeans? **[4 Marks]**
- 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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