



UNIVERSITY OF EMBU

2017/2018 ACADEMIC YEAR

SECOND SEMESTER EXAMINATIONS

**FOURTH YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE
(COMPUTER SCIENCE)**

CSC 432: SERVICE ORIENTED COMPUTING

DATE: APRIL 6, 2018

TIME: 11:00 AM – 1:00 PM

INSTRUCTIONS:

Answer Question ONE and ANY other two Questions

QUESTION ONE (30 MARKS)

- a) Differentiate between a service and a component as used on service oriented computing (4 marks)
- b) Explain the following terms as used in cloud computing
- i) Cloud consumer (2 marks)
 - ii) Cloud provider (2 marks)
 - iii) On premise (2 marks)
 - iv) IT resource (2 marks)
- c) Explain the following service models giving their services and vendors
- i) Infrastructure as a Service (3 marks)
 - ii) Platform as a Service (3 marks)
 - iii) Software as a Service (3 marks)
- d) Differentiate between a fat client and thin client (4 marks)
- e) Briefly explain the concept of Pay-as-you-go versus install-and-own as used in cloud computing environment (5 marks)

QUESTION TWO (20 MARKS)

- a) Using a well-defined diagram, describe a typical service oriented architecture, giving explanation of each component (8 marks)
- b) Describe the FOUR critical factors that influence IT professionals' intention to adopt the Service Oriented Computing (SOC) paradigm (8 marks)
- c) Differentiate WSDL and SOAP protocols in web service technology (4 marks)

QUESTION THREE (20 MARKS)

- a) Describe any SEVEN characteristics of Big Data Systems (14 marks)
- b) Using XML show how you can store book details (of your choice) that are in Swang Bookshop Centre (6 marks)

QUESTION FOUR (20 MARKS)

- a) Consider a leading e-commerce Web site such as jumia.co.ke from the consumer perspective. This would offer more functionality than their explicit Web service interfaces. Consider the basic steps of registering, signing in, searching a catalog, selecting some goods for purchase, providing shipping and payment information, and paying to conclude the deal. Evaluate the characteristics of REST from the above service design activities (7 marks)
- b) Compare and contrast application architecture and enterprise architecture (6 marks)
- c) Describe any SEVEN services offered by Application Frameworks (7 marks)

QUESTION FIVE (20 MARKS)

- a) Assume you have been contracted by company X to develop service oriented computing application for advertising internship programs showing area of specialization, period of internship, university attended, full names, and age.
- i) Describe SIX overall goals of performing a service-oriented analysis before its implementation (12 marks)
- ii) Using a sequential diagram, show the steps that you would use in performing service oriented analysis (6 marks)
- b) Explain the concept of service composition (2 marks)

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