



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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University Examinations 2024/2025

FOURTH YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE BACHELOR OF BUSINESS INFORMATION TECHNOLOGY, BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY, BACHELOR OF SCIENCE IN COMPUTER SCIENCE, BACHELOR OF SCIENCE IN COMPUTER TECHNOLOGY

CIT 3400: CLOUD COMPUTING

DATE: JANUARY 2025

TIME: 2 HOURS

INSTRUCTIONS: Answer question *one* and any other *two* questions

QUESTION ONE (30 MARKS)

- (a) Outline five benefits of using cloud computing in learning institutions [5 marks]
- (b) Cloud computing can offer a number of service models. Explain Two benefits and Three application areas of Platform-as-a-service model [5 marks]
- (c) With help of sketch diagrams, distinguish between edge computing and fog computing, in distributed computing environment [6 marks]
- (d) Highlight five cloud computing monitoring tools [5marks]
- (e) Distinguish between the following cloud computing terminologies.
 - a. Public cloud vs. private cloud [3 marks]
 - b. software-as-a-service vs. Anything-as-a-service [4 marks]
- (f) Name four cloud computing services vendors [2 marks]

QUESTION TWO (20 MARKS)

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- (a) Describe what the following cloud computing compliance requirements entails: -
- i) General data protection regulation [3 marks]
 - ii) Payment card industry and security standard (PCI/DSS) [3 marks]
 - iii) ISO / IEC 27001 [3 marks]
 - iv) Data residency requirements [3 marks]
 - v) Family education rights and privacy act [3 marks]
- (b) With the help of a block diagram, explain IaaS service model [5 marks]

QUESTION THREE (20 MARKS)

- (a) Describe the need for HDFS (hardoop distributed file system) in cloud computing [4 marks]
- (b) Discuss how cloud computing can assist in business continuity, after an eventuality. [4 marks]
- (c) With help of a block diagram, explain the architecture of para-virtualization in cloud computing [6 marks]
- (d) Explain four reasons why one would opt for a hybrid cloud other than a private cloud [4 marks]
- (e) Name four cloud computing data storage APIs [2 marks]

QUESTION FOUR (20 MARKS)

Ken is head of ICT in an upcoming multinational organization in town. The company had tasked him to register and store their data in the clouds:-

- i) Outline four considerations that the company has to take into account, before selecting an appropriate cloud computing service provider [4 marks]
- ii) Other than storage services, explain five other services that they can receive from cloud computing [5 marks]
- iii) Explain five security mechanisms, that the selected cloud vendor could put in place to secure their data [5 marks]
- iv) Select a particular cloud vendor of your choice, and outline the procedure of setting up, registering and sending data to their cloud [6 marks]

QUESTION FIVE (20 MARKS)

- (a) Highlight five risks associated with distributed system computer usage. [5 marks]

- (b) A certain goods Distribution Company wanted to incorporate cloud computing to assist them render their services. Discuss the application areas of cloud computing in goods distribution Company. [5 marks]
- (c) Highlight four Saas maturity models [4 marks]
- (d) With reference to cloud computing service level agreements (SLA), answer the following questions: -
- i) Explain what is SLA [2 marks]
 - ii) Outline four benefits of writing a SLA between cloud vendor and the client [4 marks]