



MACHAKOS UNIVERSITY

University Examinations for 2022/2023

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FIRST YEAR SPECIAL / SUPPLEMENTARY EXAMINATIONS FOR

BACHELOR OF SCIENCE (CLOUD COMPUTING AND INFORMATION SECURITY)

SCC110: INTRODUCTION TO CLOUD COMPUTING

DATE: 27/7/2023

TIME: 8.00-10.00 A.M

INSTRUCTIONS:

Answer Question ONE and other TWO Questions

QUESTION ONE (30 MARKS)

- a) Define the term virtualization (2 marks)
 - b) Differentiate the following aspects as relates to virtualization
 - i. CNA and VRM as used in fusion compute (2 marks)
 - ii. Tagged frame and untagged frame (2 marks)
 - iii. Access link and trunk link (2 marks)
 - iv. Broad cast and unicast (2 marks)
 - c) In virtualization, hypervisors are often used. They possess some characteristics which facilitates virtualization process. Discuss four of such features. (8 marks)
 - d) Differentiate between Para virtualization and full virtualization (2 marks)
 - e) Analyse the following concepts, stating how they differ from cloud computing (6 marks)
 - i. Parallel computing
 - ii. Grid computing
 - iii. Distributed computing
 - f) Discuss four types of clouds, based on the deployment model (4 marks)
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QUESTION TWO (20 MARKS)

- a) Discuss the following terms as used in network virtualization
 - i. VLAN (2 marks)
 - ii. Access switch (2 marks)
 - iii. Trunk switch (2 marks)
 - iv. Tagged frame (2 marks)
- b) Illustrate the role of the following function as applicable in virtual networks
 - i. MAC learning (3 marks)
 - ii. Packet forwarding (3 marks)
- c) Differentiate between the following computer data storage terms;
 - i. HDD and SSD hard drives (2 marks)
 - ii. SATA and SAS hard drive (2 marks)
 - iii. SAN and NAS storage (2 marks)

QUESTION THREE (20 MARKS)

- a) Konza ICT center has decided to adopt fusion compute in their data center to run the affairs of the cloud computing platform. Discuss four advantages that the customers are likely to enjoy out of this. (8 marks)
- b) Illustrate five functions of VRM in fusion compute. (10 marks)
- c) Highlight two functions of CAN in fusion compute. (2 marks)

QUESTION FOUR (20 MARKS)

- a) Define cloud computing (2 marks)
- b) Discuss five characteristics of cloud computing (5 marks)
- c) Discuss four types of clouds based on service model (4 marks)
- d) Highlight four characteristics of virtualization hypervisors (4 marks)
- e) Illustrate how memory virtualization is achieved. (5 marks)

QUESTION FIVE (20 MARKS)

- a) Discuss three limitations of serial computing (6 marks)
- b) Analyse two reasons why you would prefer parallel computing than any other mode of computing. (4 marks)
- c) Differentiate between cloud computing 1.0, cloud computing 2.0 and cloud computing 3.0 (9 marks)
- d) Describe the technological change which happened in the year 2000 (1 mark)