



MACHAKOS UNIVERSITY

University Examinations for 2022/2023 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

SECOND YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (CLOUD COMPUTING AND INFORMATION SECURITY)

SCC 241: ENTERPRISE NETWORK PLANNING AND ADMINISTRATION

DATE: 18/4/2023

TIME: 8:30 – 10:30 AM

Instructions: Answer question one and any other two questions in this paper

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) i. Define a daemon (2 marks)
ii. Describe the purpose of a server daemon (4 marks)
- b) Outline THREE methods of user identification in the network. (3 marks)
- c) Describe the Different layers of the OSI model (7 marks)
- d) Describe the criteria for creating an effective and efficient network (4 marks)
- e) Discuss the process of configuring a new server. (8 marks)
- f) Outline TWO features of enterprise network (2 marks)

QUESTION TWO (20 MARKS)

- a) Explain the three important elements of a protocol (3 marks)
- b) Differentiate between firewall and Antivirus (6 marks)
- c) Discuss the functions of NTP server (6 marks)
- d) Describe the potential consequences to an organization in case of a network security attack. (5 marks)

QUESTION THREE (20 MARKS)

- a) Convert the following IP addresses from decimal to binary format
 - i. 192.90.178.254 (4 marks)
 - ii. 192.168 1.1 (4 marks)
- b) Discuss how SSH and SELinux are used to increase the security of a server (8 marks)
- c) Describe TWO devices used in the network layer of OSI model (4 marks)

QUESTION FOUR (20 MARKS)

- a) Discuss TWO advantages of using network management tools (4 marks)
- b) You are the network engineer at ZEE Company. You would want to move away from the on-prem servers and move to the cloud. Outline THREE reasons you would give to the management to justify your decision (6 marks)
- c) Explain TWO advantages of fiber optics over other media. (4 marks)
- d) Discuss three common features of network operating systems (6 marks)

QUESTION FIVE (20 MARKS)

- a) When it comes to modern enterprise network management, automation is everything. Discuss FOUR deliverables achieved by network automation that give your business a competitive edge (8 marks)
- b) Discuss TWO advantages of peer-peer network (4 marks)
- c) You are the network administrator in a new school that has no access to internet. The school principal wants to introduce online classes during the holidays in order to improve the performance of the student's grades in KNEC examinations. You have been tasked to set up a LAN (local area network for the institution). Outline the steps you would follow in setting up the new LAN (8 marks)