



MACHAKOS UNIVERSITY

University Examinations For 2022/2023 Academic Year

SCHOOL OF ENGINEERING

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

THIRD YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

SIT 385 SYSTEM ADMINISTRATION

DATE: 17/4/2023

TIME: 11:00 - 1:00 PM

INSTRUCTIONS: Answer Question ONE and other TWO Questions

QUESTION ONE (30 MARKS)

- a) Deploying cloud computing can differ depending on requirements, and there are four deployment models that have been identified, each with specific characteristics that support the needs of the services and users of the clouds in particular ways. Describe these FOUR deployment models. (4 marks)
- b) Explain THREE benefits of efficient data storage (6 marks)
- c) State FIVE roles of system administrator (5 marks)
- d) Windows server supports several roles. Identify the steps followed to add roles to a Windows server installation (4 marks)
- e) Explain how one would determine the best file system for a given environment. (5 marks)
- f) Recommend the THREE backup types that a system administrator can adopt (6 marks)

QUESTION TWO (20 MARKS)

- a) Proper understanding of the overall goals for the energy monitoring is essential for designing an effective monitoring concept. Determine the FIVE goals for energy monitoring in the server room. (5 marks)

- b) Split cooling systems are commonly used in small server rooms. The cooling power range of this family of systems is 1–100 kW. Portable systems may be installed for example to prevent hot spots.
- i. As a system administrator, what are some of the advantages of having portable systems in your server room (4 marks)
 - ii. As a system administrator, what are some of the advantages of having portable systems in your server room (3 marks)
- c) Servers are large data storage and processing devices that exist either as hardware or as virtual storehouses located on the internet that share and save information. As system Administrator, name four reasons why you would advise an organization to have a server (4 marks)
- d) Mention the steps involved as part of server installation process (4 marks)

QUESTION THREE (20 MARKS)

- a) Due to the complexity of modern computing systems, a wise technician will have and follow a troubleshooting methodology. A formal methodology gives the technician a starting place and a logical sequence of steps to follow. If you do not have a methodology in place, you are much more likely to waste time and effort and create frustration—not only for yourself but also for your end user.
- i. Discuss the importance of having a trouble shooting methodology (2 marks)
 - ii. Explain the six step trouble shooting methodology (8 marks)
- b) What does it mean when a user tries to create new domain and gets an error message stating that the domain name master cannot be contacted; yet his/her account has proper rights (6 marks)
- c) Identify four basic principles of system administration (4 marks)

QUESTION FOUR (20 MARKS)

- a) Poor username and password management is a typical problem in most enterprise networks. While sophisticated, centralized authentication systems can help reduce problems, there are basic guidelines that if followed can help tremendously. Describe the rules that govern the use of usernames and passwords in enterprise networks (4 marks)
- b) A Well thought out security policies can significantly increase the security of a network. While policies can be both complex and cumbersome or basic and straight forward, it is often the simple aspects that prove most useful. Assume that you are the head of the system administration department of Machakos University. The university wishes to come up with a network security policy. Analyze 6 items would you include in such a network security policy (6 marks)
- c) Explain five important considerations when designing a server room (5 marks)
- d) Briefly describe the process of adding a new user to an organization's network system (5 marks)

QUESTION FIVE (20 MARKS)

- a) Implementing a resource management solution does not need to be overly complex. However, it is critical that your approach be embraced and sustained at both the executive and end-user level. As a system administrator, what are the Five best practices for achieving strategic resource planning at the work place. (5 marks)
- b) With the help of a diagram, Explain Client Server Computing Architecture. Give an example of client server computing. (6 marks)
- c) What are some of the alternative ways for mapping a drive letter to a file server if you wish to connect to one of the servers shared folders (4 marks)
- d) Machakos University has recorded a tremendous growth in terms of IT infrastructure. As a result, the management has setup an IT department. As the system administrator in charge, you are required to come up with a disaster recovery plan. Develop a sample recovery plan for Machakos University (5 marks)