



MACHAKOS UNIVERSITY

University Examinations for 2017/2018

SCHOOL OF ENGINEERING AND TECHNOLOGY

**DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY
FOURTH YEAR SECOND SEMESTER EXAMINATION FOR
BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)**

SCO 403: NETWORK APPLICATIONS

DATE: 5/12/2017

TIME: 2:00 – 4:00 PM

INSTRUCTIONS

Answer Question ONE and any other TWO Questions

QUESTION ONE (30 MARKS)

- a) Define the following terms: (10 marks)
- i Attenuation
 - ii Protocol
 - iii Half duplex
 - iv Full duplex
 - v VOIP
- b) Advise a company that is interested in setting up a new network on the factors that needs to be considered. (6 marks)
- c) Describe what makes a network efficient. (6 marks)
- d) Transmission of data through a medium is essentially a function of Bandwidth and data rate. Describe how the two factors relates to each other. (4 marks)
- e) Discuss the factors of the transmission mediums to implement on a network.(4 marks)

QUESTION TWO (20 MARKS)

- a) Data on transit is constantly under the risk of being accessed and used by adversaries to the detriment of the owners. Discuss some of the threats associated with data on transit. (8 marks)
- b) Describe some of the measures that one would need to employ to protect the network and data to mitigate the effects of the attacks. (8 marks)
- c) Discuss network use and user policy and list any two items that should be included in it. (4 marks)

QUESTION THREE (20 MARKS)

- a) Describe any FOUR tools available to the network administrator to generate documentation. (8 marks)
- b) Define the concept of moving a network. (4 marks)
- c) State some of the issues that needs to be considered at the planning phase before moving a network (6 marks)
- d) Discuss any TWO reasons that a network may experience downtime. (2 marks)

QUESTION FOUR (20 MARKS)

- a) Discuss any FOUR reasons that may occasion upgrading a network. (8 marks)
- b) Define the term Network congestion. (2 marks)
- c) State the relationship between congestion control and quality of service. (4 marks)
- d) Describe the congestion of control techniques defined under open loop congestion control. (6 marks)

QUESTION FIVE (20 MARKS)

- a) Distinguish between the following:
 - i) Encapsulation and decapsulation (2 marks)
 - ii) Frame and packet (2 marks)
- b) Describe any two types of addresses used in computer networks (6 marks)
- c) Outline the differences between the TCP/IP and OSI/ISO computer networking models (6 marks)
- d) Explain the differences between RJ4S and RJ11 connectors (4 marks)