



MACHAKOS UNIVERSITY

University Examinations for 2017/2018

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

**SECOND YEAR FIRST SEMESTER EXAMINATION FOR BACHELOR OF
SCIENCE IN INFORMATION TECHNOLOGY**

SIT 201: DATA COMMUNICATION

DATE: 6/12/2017

TIME: 2.00-4.00 PM

INSTRUCTIONS: Answer Question One and Any Other Two questions

SECTION A: COMPULSURY (30 MARKS)

QUESTION ONE (30 MARKS)

- a) Differentiate between the following
 - i. Full duplex and Half duplex (2 marks)
 - ii. Peer – to – Peer and Client Server Network architecture (2 marks)
- b) What is the role of standards in networking? (2 marks)
- c) Differentiate between broadband and baseband signaling (4 marks)
- d) Discuss the role of SNMP in networks (3 marks)
- e) With the aid of a diagram, explain the components of a data packet (8 marks)
- f) Explain the nature of information delivered in response to a DHCP request (3 marks)
- g) Briefly discuss the functionality relating to any three layers of the OSI (6 marks)

QUESTION TWO (20 MARKS)

- a) Give four types of computer networks when classified according to scope and size.

- (4 marks)
- b) Define flow control as used in computer networks. (2 marks)
- c) Describe any three network topologies. (6 marks)
- d) Briefly describe the following terms as used in computer networks.
- i. Topology
 - ii. Protocol
 - iii. Routing
 - iv. Packet.
- (8 marks)

QUESTION THREE (20 MARKS)

- a) With the aid of a well labeled diagram discuss the OSI reference model in detail. (8 marks)
- b) Outline the Architecture of TC/IP reference model and explain its difference from the OSI one. (8 marks)
- c) Outline four advantages of computer networks. (4 marks)

QUESTION FOUR (20 MARKS)

- a) Outline the 5 components of data communication. (5 marks)
- b) Explain the following transmission media;
- i. Twisted pair
 - ii. Fibre optic
 - iii. Coaxial cable
- (6 marks)
- c) Discuss the following topologies using appropriate diagrams: Bus and Ring. (4 marks)
- d) Outline the standards that are commonly used in computer networks. (5 marks)