



MURANG'A UNIVERSITY COLLEGE

(A Constituent College of Jomo Kenyatta University of Agriculture and Technology)

University Examinations 2015/2016

FIRST YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

BIT 2108: COMPUTER NETWORKS

COURSE: B.Sc. IT

TIME: 2HRS

DAY/TIME: Friday 2.00 pm

DATE: 11/12/15

Instructions: Answer Question 1 and Any Other Two.

QUESTION ONE (30 Marks)

- a) Define the following terms (7 Marks)
- i. Physical topology
 - ii. Logical topology
 - iii. Bandwidth
 - iv. Wireless Media
 - v. Protocol
 - vi. Attenuation
 - vii. EMI
- b) Discuss the following switching techniques under data transmission in networks:
- i) Packet Switching
 - ii) Circuit Switching
 - iii) Message Switching (9 Marks)
- c) With aid of a diagram discuss the OSI reference model (14 Marks)

QUESTION TWO (20 Marks)

- a) Differentiate between the following terms:
 - i) Synchronous and Asynchronous bit transmission:
 - ii) Baud rate and Bit per second
 - iii) Half Duplex and Full duplex (6 Marks)
- b) Discuss the three light propagation modes in fiber optic cables (12 Marks)
- c) Identify the cable that you would choose to move backbone traffic and Give one reason why? (2 Marks)

QUESTION THREE (20 Marks)

- a) With aid of diagrams discuss the three wireless propagation methods (9 Marks)
- b) Discuss the following physical topologies, stating their advantages and disadvantages(9 Marks)
 - i. Star topology
 - ii. Bus topology
 - iii. Ring topology
- c) Explain two purpose of computer networking (2 Marks)

QUESTION FOUR (20 Marks)

- a) Networks can be classified by resource allocation, discuss the following kinds of networks
 - i. Peer to Peer networks (3 Marks)
 - ii. Client-server networks (3 Marks)
- b) With aid of a diagram discuss UTP cables in terms of its applications, advantages and disadvantages (8 Marks)
- c) Briefly describe the following wireless transmission media
 - i. Terrestrial microwave (2 Marks)
 - ii. Satellite microwave (2 Marks)
 - iii. Infrared rays (2 Marks)///