

**W1-2-60-1-6**

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2014/2015**

**YEAR I SEMESTER I EXAMINATION FOR THE DEGREE OF BACHELOR OF BUSINESS INFORMATION TECHNOLOGY**

**BIT 2108: COMPUTER NETWORKS**

**DATE:AUGUST 2015 TIME: 2 HOURS:**

**INSTRUCTIONS: Answer question one (compulsory) and any other two questions.**

**QUESTION ONE 30 MARKS**

a. Differentiate between

 i. logical and physical network topologies. (2 marks)

 ii. Star and Ring topologies. (2 marks)

 iii. Broadband and Baseband signaling. (2 marks)

 iv. LAN and WAN. (2 marks)

 v. CSMA/CD and CSMA/CA (2 marks)

 vi. Router and Switch (1 marks)

b. List and explain any two things that computer networks provide to people.

 (4 marks)

c. Outline the five components of a data communication system. (5 marks)

d. Explain the role of the following OSI layers.

 i. Application layer.

 ii. Network layer

 iii. Transport layer.

 iv. Presentation layer. (10 marks)

**QUESTION TWO (20 MARKS)**

a. Discuss any five factors that influence the choice of a Network topology. (10 marks)

b. Discuss the following network devices

 i. Gateway

 ii. Switch

 iii. Bridge

 iv. Router

 v. Brouter. (10 marks)

**QUESTION THREE (20 MARKS)**

a. TCP/IP is the most popular data communication protocol. Describe what is a data communication protocol and the features or layers of a TCP/IP protocol.(10 marks)

b. i. Explain any six benefits of the OSI model. (6 marks)

 ii. Describe the half-duplex (CSMA/CD) access method. (4 marks)

**QUESTION FOUR (20 MARKS)**

a. i. Giving one example, each differentiate between guided and wireless media.

 (4 marks)

 ii. List any six wireless technologies. (6 marks)

b. List and briefly explain five basic functions of an operating system. (10 marks)