

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

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2015/2016**

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

**BIT 2108: COMPUTER NETWORKS**

**DATE:DECEMBER 2015 TIME: 2 HOURS**

**INSRUCTIONS:** Answer question one and any other two questions.

QUESTION ONE

a. List at least 7 roles of communication protocols. (7 marks)

b. Explain the functions of the following types of servers.

 i. File server

 ii. Application server

 iii. Mail server

 iv. Proxy server. (8 marks)

c. i. Differentiate between the following terminologies as used in computer networks;

 Broadband and base band signaling. (2 marks)

 Halfd duplex and full duplex transmission. (2 marks)

d. i. Explain why we have to use layering in Networks software. (3 marks)

 ii. Distinguish between a hub and a repeater as network hardwares. (4 marks)

 iii. Outline four advantages of computer networks. (4 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)