

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

**JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2018/2019**

**YEAR II SEMESTER II EXAMINATION FOR THE DIPLOMA IN ICT**

**HCB 0204: DATA COMMUNICATION AND COMPTUER NETWORKS**

**DATE: APRIL 2019 TIME: 1.5 HOURS**

**INSTRUCTIONS:** Answer any three questions.

QUESTION ONE

a. Describe the function of the following network components.

 i. Switch

 ii. Modem

 iii. Router

 iv. NIC

 v. Wireless access point WAP. (10 marks)

b. Explain the following data transmission configuration.

 i. Simplex

 ii. Half duplex

 iii. Full diplex. (6 marks)

c. Outline the difference between Digital and Analog data.

QUESTION TWO

a. Using diagrams explain the following communication medium stating their typical areas of application

 i. Coaxial cable

 ii. Twisted pair cable.

 iii. Terrestrial microwave

 iv. Satellite microwave (10 marks)

b. Briefly explain the importance of flow control in Data Communication. (4 marks)

c. Explain three situations in network installation where you would recommend the use of wireless technology. (6 marks)

QUESTION THREE

a. Describe the three different types of network fault caused by transmission impairment.

 (6 marks)

b. Explain how an error is detected during data transmission. (2 marks)

c. Once an error is detected what are the different ways in which the error can be corrected. (4 marks)

d. Illustrate using diagram elements of data communication. (8 marks)

QUESTION FOUR

a. Explain the following data switching technique.

 i. Grait switching.

 ii. Message switching

 iii. Packet switching (6 marks)

b. For each of the switching technique above list their advantages and area of application.

 (3 marks)

c. Explain the use of parity bit in data transmission. (2 marks)

d. Outline factors to consider when selecting the bet cable for a network. (9 marks)