

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

## JOMO KENYATTA UNIVERSITY

**OF**

**AGRICULTURE AND TECHNOLOGY**

# University Examinations 2014/2015

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

**BIT 2204 : NETWORK SYSTEM AND ADMINISTRATION**

**DATE: APRIL 2015 TIME: 2 HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE (COMPULSORY) AND**

**ANY OTHER TWO QUESTIONS.**

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**QUESTION ONE (30 MARKS)**

(a) Define the following terms as used in networks: [6 marks]

1. Datarate.
2. Bandwidth.
3. Attenuation.
4. Protocal.
5. Client.
6. Sewer.

(b) Discuss any five aspects that need to be considered before designing a network for a given organization. [10 marks]

(c) Differentiate between the following terms: [6 marks]

1. CSMA/CD and Token passing access methods.
2. Physical topology v/s logical topology.
3. Half duplex v/s duplex.

(d) Explain the following under data transmission in WAN: [6 marks]

1. Packet switching.
2. Circuit switching.
3. Message switching.

(e) Differentiate between guided and unguided media. State two examples for each. [4 marks]

**QUESTION TWO (20 MARKS)**

(a) Discuss particularly, where RG8,9,11 and 58,59 coaxial cables are best suited for Ethernets with respect to the IEEE 802.E standard.

[4 marks]

(b) Explain the construction principles that make fiber optic a superior conduit. [4 marks]

(c) Illustrating with a diagram, explain the frame format of an Ethernet LAN. [6 marks]

(d) Describe schematically the orientation of OSI layer stating the functions at each layer. [6 marks]

**QUESTION THREE (20 MARKS)**

(a) Routers use the least cost routing concept. Discuss the concept.

[6 marks]

(b) Describe the operating principles, differentiating the Adoptive routing and Non-adoptive routing. [6 marks]

(c) A repeat is not simply an amplifier. Qualify this statement.

[4 marks]

(d) Describe any two modulation/encoding techniques. [4 marks]

**QUESTION FOUR (20 MARKS)**

(a) Describe the implementation of the following signal propagations. Illustrate using diagrams: [10 marks]

1. Troposhere.
2. Ionosphere.

(b) Discuss the blue tooth technology. [10 marks]