

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS  
FIRST YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR  
COMMERCE (MANAGEMENT OPTION)**

**COSC 260: DATA COMMUNICATION**

**STREAMS:**

**TIME: 2 HOURS**

**DAY/DATE: WEDNESDAY 13/12/2017**

**8.30 A.M – 10.30 .A.M**

**INSTRUCTIONS:**

- **Answer QUESTION ONE and any other TWO questions.**
- **This is a CLOSED BOOK exam. No reference materials are allowed in the exam room.**
- **No mobile phone allowed in the exam room (*make sure to switch it off and leave it with the invigilator if you carried one*).**
- **Write your answers legibly and use your time wisely**

**SECTION A (COMPULSORY)**

**Question One (Compulsory) (30 marks)**

- What is TCP/IP (2 Marks)
- Discuss the components of a data communication system. (8 Marks)
- Outline the requirements for error control mechanism. (4 Marks)
- Describe any three types of computer networks. (6 Marks)
- Distinguish between partial mesh and full mesh (4 Marks)
- Discuss any THREE LAN technologies. (6 Marks)

**SECTION B (Answer any TWO questions from this section)**

**Question Two (20 marks)**

- Discuss THREE cryptographic algorithms used today. (9 Marks)
- Distinguish between *authenticity*, *integrity* and *authorization* as used to describe security in computer networks. (6 Marks)
- Outline the advantages of networks in an organization. (5 Marks)

**Question Three (20 marks)**

- a) What is Channel Capacity? Explain the factors that determine it. (8 Marks)
- b) Differentiate between Parity Check and Cyclic Redundancy Check. (6 Marks)
- c) Compare between guided and unguided media in network transmission. (6 Marks)

**Question Four (20 marks)**

- a) Discuss any FIVE factors that cause transmission impairment. (10 Marks)
- b) Distinguish between asynchronous and synchronous serial transmission. (4 Marks)
- c) Briefly describe the three forms of analog modulation. (6 Marks)

**Question Five (20 marks)**

- a) Distinguish between *circuit*, *message* and *packet switching*. (9 Marks)
  - b) Discuss any FOUR functions of the data link layer in detail. (8 Marks)
  - c) Describe three types of errors in data transmission. (3 Marks)
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