

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATION
RESIT/SUPPLEMENTARY / SPECIAL EXAMINATIONS
EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF
SCIENCE IN COMPUTER SCIENCE**

COSC 361: COMPUTER NETWORKS

STREAMS:

TIME: 2 HOURS

DAY/DATE: MONDAY 01/11/2021

2.30 P.M - 4.30 P.M.

INSTRUCTIONS

- **Attempt question ONE (Section A) and any other TWO from SECTION B**
- **Marks are awarded for clear and concise answers**
- **ONLY the first THREE Questions attempted will be marked (Question one inclusive)**

SECTION A-Compulsory

Question ONE (30 marks)

- a) Differentiate between host based firewall and network based firewall (4 marks)
- b) State Two factors to consider during network design (2 marks)
- c) Explain three objectives of network security (6 marks)
- d) Explain attacks that targets computer networks and how they can be protected (6Marks)
- e) Differentiate between
 - a. Server based architecture and peer based architecture (6 Marks)
 - b. Ethernet technology and token passing technology (6 Marks)

Question TWO (20 marks)

- a. Differentiate between intranet and extranet (4 Marks)
- b. Describe the impact of internet on businesses. (8 Marks)

- c. Explain the various protocols found in the application layer of the OSI model. (8 Marks)

Question THREE (20 marks)

- a. Explain the two categories of Communication Software. (4 Marks)
- b. State three general functions of a communication software (4 Marks)
- c. Explain the factors that determine the maximum length of any transmission media. (4 Marks)
- d. Explain four factors to consider when choosing a topology. (8 Marks)

Question FOUR (20 marks)

- a) Explain four advantages of networking a school (4 marks)
- b) Explain Four benefits of virtual private network (8 marks)
- c) Explain the WAN switching techniques (6 marks)
- d) Differentiate between Forwarding and routing in relation to routers (2 Marks)

Question FIVE (20 marks)

- a) Explain with the help of a schematic diagram the main component of a data communication system. (6Marks)
 - b) Differentiate between UTP and STP cable. (4 Marks)
 - c) Explain the operation of the following network devices (6 Marks)
 - a. Bridge
 - b. Access point
 - c. Firewall
 - d) Briefly describe the operation and significance of the Time To Live (TTL) field of an IP packet header (4 marks)
-