LAIKIPIA UNIVERSITY

UNIVERSITY EXAMINATIONS

SECOND SEMESTER 2023/2024 ACADEMIC YEAR

SECOND YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE (ICT) AND BACHELOR OF COMPUTER SCIENCE

COMP 226/BICT 221: COMPUTER NETWORK

STREAM: R ***TIME: 2 HRS***

DAY: MONDAY [2.30 – 4.30 P.M] ***DATE: 08/04/2024***

THIS QUESTION PAPER CONSISTS OF FOUR (4) PAGES

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INSTRUCTIONS TO CANDIDATES

1. **Answer Question 1 and any other two questions in the answer booklet provided.**
2. **Do not write on your question papers. All rough work should be done in your answer booklet.**
3. **Clearly indicate which question you are answering.**
4. **Write neatly and legibly.**
5. **Edit your work for language and grammar errors. Follow all the instructions in the answer booklet**
6. **Follow all the instructions in the answer booklet**

SECTION A: (COMPULSORY) TOTAL MARKS FOR THIS SECTION IS 30 MARKS

QUESTION ONE (30 MARKS)

a. Define the following terms as used in the internet technology **(4 Marks)**

   i. Web browser

   ii. Telnet

   iii. FTP

   iv. Intranet

b. Differentiate between Peer to peer network and a Server based network **(2 Marks)**

c. Describe the following networking devices **(6 Marks)**

   i. Bridges

   ii. Switches

   iii. Router

d. Explain wireless communication and its **two** advantages **(4 Marks)**

e. Outline **five** factors to consider when selecting the type of physical media to deploy in a LAN **(5 Marks)**

f. A computer network is created when two or more computers are wired together to share information and resources. Briefly explain five other motivations for computer networks **(5 Marks)**

g. Why is wireless technology necessary **(4 Marks)**

SECTION B. TOTAL MARKS FOR THIS SECTION IS 40 MARKS

QUESTION TWO

a. Classify the following IP addresses in class A, B, C, D or E **(6 Marks)**

   i. 10.2.28.1

   ii. 192.168.1.100

   iii. 168.10.1.150

   iv. 127.0.0.0

   v. 28.2.100.20

   vi. 200.55.1.100

b. List two protocols that accomplish communication in each layer of the OSI model. **(7 Marks)**

c. State **three** network security threats. (**3 Marks)**

d. Explain the following transmission media

i. Coaxial Cable **(2 Marks)**

ii. Optical Fiber **(2 Marks)**

QUESTION THREE

a. Explain error detection strategy used to control data transmission (**6 Marks**)

b. What is VLAN **(2 Marks)**

c. Distinguish between the internet and the world wide web (**4 Marks)**

d. List **four** benefits of client –server networks compared to peer to peer network (**4 Marks)**

QUESTION FOUR

a. Using the Open System Interconnection Reference Model explain how data moves from a computer to the hub, the bridge, router and finally the Internet. (**10 Marks)**

b. Distinguish between a ring topology and a star topology. **(4 Marks)**

c. Discuss three types of Physical networks. **(6 Marks)**

QUESTION FIVE

a. Explain the harm caused by the following **(4 Marks)**

i. Ransom-ware

ii. Spam

b. Distinguish between modulation techniques verses encoding. Give two examples of each **(4 Marks)**

c. The internet offers a variety of services to user. List and explain any four **(4 Marks)**

d. With reference to the client-server paradigm, explain how are able to access online learning remotely from home **(4 Marks)**

e. What are the differences between TCP and UDP? (**4 Marks)**