

# **PAN AFRICA CHRISTIAN UNIVERSITY**

## **BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY**

### **END OF SEMESTER EXAMINATION**

**DEPARTMENT:** COMPUTING AND INFORMATION TECHNOLOGY

**COURSE CODE:** BIT308

**COURSE TITLE:** COMPUTER NETWORKS

**CAMPUS:** ROYSAMBU

**EXAM DATE:** DECEMBER, 2022

**TIME:** 2PM – 5PM (Thursday)

### **INSTRUCTIONS**

- This exam script has **TWO (2)** sections.
- Read all questions carefully before attempting.
- Answer All questions in Section **A** and any other Three questions in Section **B**.
- Write only your student number on the answer booklet provided.

**SECTION A**

**(Answer ALL questions in this section)**

**Question 1:**

- a) State the criteria in which Network Administrators use to distinguish different types of networks. **[2 Marks]**
- b) Identify two examples of Wide Area Network. **[2 Marks]**
- c) Describe full duplex data flow in Communication networks. **[2 Marks]**
- d) Discuss the difference between Transmission control protocol (TCP) and User datagram protocol (UDP). **[4 Marks]**

**SECTION B**

**(Answer any THREE (3) questions in this section)**

**Question 2:**

- a) Computer Networks involves collection of autonomous computers interconnected by a single technology. Discuss three benefits of computer networks today. **[6 Marks]**

- b) Describe two conditions which a computer network must meet in order to ensure efficiency and effectiveness of device communication. **[4 Marks]**

**Question 3:**

- a) IPV6 allows Windows users to communicate with other users over the Internet. Discuss three types of addresses that IPV6 supports. **[6 Marks]**
- b) Explain the concept of Switching and routing. **[4 Marks]**

**Question 4:**

- a) Differentiate between computer networks and a distributed system. **[2 Marks]**
- b) Discuss three advantages of Wide Area Network. **[6 Marks]**
- c) Identify the Network topologies below:- **[2 Marks]**
  - i) A topology that uses a single cable which connects all the including nodes.
  - ii) A topology that has a root node and all other nodes are connected to it forming a hierarchy.

**Question 5:**

- a) Discuss the benefits of OSI Model in Computer Networks. **[2 Marks]**
- b) A Network protocol defines what is to be communicated, how it is to be communicated and when it is to be communicated. Describe three elements of a Network a protocol. **[6 Marks]**
- c) State two advantages of hybrid Topology. **[2 Marks]**

**Question 6:**

Differentiate between the OSI Model and TCP/IP Model highlighting the layers for each model **[10 Marks]**