

**061006T4ICT**

**ICT TECHNICIAN Level 6**

**ICT/OS/IT/CR/1/6**

**PERFORM COMPUTER NETWORKING**

**JULY/AUGUST 2023**



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION  
COUNCIL (TVET CDACC)**

**WRITTEN ASSESSMENT**

**TIME: 3 HOURS**

**INSTRUCTIONS TO CANDIDATE**

1. This paper has TWO sections A and B. Attempt questions in each section as per instructions given in the section.
2. You are provided with a separate answer booklet.
3. Marks for each question are indicated in the brackets.
4. Do not write on the question paper

**This paper consists of 4 printed pages**

**Candidates should check the question paper to ascertain that all pages  
are printed as indicated and that no questions are missing**

**SECTION A: (40 MARKS)**

*Attempt ALL questions in this section.*

1. Define the following terminologies used in computer networking field (3 Marks)
  - a) Network
  - b) Network topology
  - c) Node
2. A company seeks to buy networking devices to set up a LAN. Some of the devices on the list include the following: hub, switch and router. Outline the purpose of each of these devices. (3 Marks)
3. Differentiate between Straight-through and crossover cables as used in network connection media (2 marks)
4. Compare and contrast the TCP and UDP protocols as used in data communication (6 Marks)
5. Illustrate peer-to-peer (P2P) networks and server-based networks (4 Marks)
6. VPN is one of the important technologies used by most of the networking organizations and individuals in their day-to-day networking activities. State THREE of its advantages (3 Marks)
7. Explain TWO ways in which ARP protocol is associated with MAC/IP addresses (4 Marks)
8. Identify FOUR uses of remote terminal service protocols (4 Marks)
9. Distinguish between intranet and extranet as used by networking organizations (4 Marks)
10. List the FIVE layers of the TCP/IP reference model (5 Marks)
11. Networking devices such as smartphones and laptops require IP addresses to communicate with each other and access the internet. Outline TWO examples of Internet connections. (2 Marks)

**SECTION B: (60 MARKS)**

*Attempt any Three (3) questions in this section.*

12.

- a) A Newly founded networking company seeks to employ a network administrator. Highlight FOUR duties he is required to perform (4 Marks)
- b) Explain THREE classes of ipv4 address giving examples in each (6 Marks)
- c) Explain FIVE benefits of DHCP protocol as used by network administrator during network configuration (10 Marks)

13.

- a) Discuss FIVE types of networks used by individuals and organizations in real life. (10 Marks)
- b) Encryption and decryption are important operations in the field of network communication.
  - i. Distinguish between Encryption and decryption (4 Marks)
  - ii. Explain THREE benefits of their use (6 Marks)

14.

- a) Discuss the following terms used in networking field (6 Marks)
  - i. DNS
  - ii. NAT
  - iii. VLAN
- b) Describe the OSI reference model giving examples of different protocols operating at each of its layers. (14 Marks)

15.

- a) Wambilianga runs a small business with 10 computer devices. He seeks to know what type of IP addresses he should use to assign to his devices.
  - i. Explain public, private and special ipv4 addresses (6 Marks)
  - ii. Advise him on what type of IP address he should use and justify (4 Marks)
- b) With aid of diagrams, illustrate FIVE types of network topologies commonly used by networking organizations. (10 Marks)