

061005T4ICT

ICT TECHNICIAN LEVEL 5

ICT/OS/IT/CR/01/5

PERFORM COMPUTER NETWORKING

NOV/DEC 2023



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

WRITTEN ASSESSMENT

Time: 3 Hours

INSTRUCTIONS TO CANDIDATE

1. This paper has THREE sections A, B and C. 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

SECTION A: 20 MARKS

Attempt ALL questions in this section.

1. What type of network covers a small geographic area, such as a home, office, or campus?
 - A. WAN (Wide Area Network)
 - B. MAN (Metropolitan Area Network)
 - C. LAN (Local Area Network)
 - D. PAN (Personal Area Network)
2. Which of the following is an example of a physical network topology?
 - A. Star
 - B. Bus
 - C. Mesh
 - D. Token Ring
3. Robert is creating a central network. Select the device he will need to connect multiple devices in a local area network (LAN)
 - A. Router
 - B. Modem
 - C. Hub
 - D. Firewall
4. An institution has a modem included in their network setup. Why do you think its important to have it there?
 - A. Data encryption
 - B. Network security
 - C. Converting digital data to analog signals and vice versa
 - D. Routing data between devices
5. Choose the primary function of the "ping" command in network configuration?
 - A. To send a test packet to a network device to check if it's reachable
 - B. To configure DNS settings
 - C. To list network interfaces
 - D. To create a virtual private network
6. In a network configuration, which method allows devices to obtain IP addresses automatically from a DHCP server?
 - A. Static IP addressing
 - B. Dynamic IP addressing
 - C. Manual IP addressing
 - D. APIPA (Automatic Private IP Addressing)

7. When configuring network protocols, select the role of a port number?
 - A. To identify a network device
 - B. To determine the network's IP address
 - C. To specify the type of service or application
 - D. To encrypt data traffic
8. During network protocol configuration at Musembe Enterprises, a firewall is installed. Choose the primary purpose of the firewall?
 - A. To route data between devices
 - B. To establish secure VPN connections
 - C. To manage IP addressing
 - D. To block unauthorized network traffic
9. In the context of network device configuration, what does the term "bandwidth" refer to?
 - A. The physical width of a network cable
 - B. The maximum data transfer rate of a network connection
 - C. The number of devices connected to a network
 - D. The network's geographical coverage
10. Select the purpose of a DNS server as used in network configuration.
 - A. To convert IP addresses to domain names
 - B. To manage network security policies
 - C. To create a secure VPN Connection
 - D. To secure email communications
11. You are assigned to carry out testing in a network infrastructure, Pick the main goal for this.
 - A. To identify potential network security threats
 - B. To optimize network aesthetics
 - C. To reduce network scalability
 - D. To ensure network reliability, performance, and security
12. Ratti just used the "tracert" command. Identify what she is trying to identify on the network
 - A. To encrypt data transmissions
 - B. To test network connectivity and display the path taken by packets
 - C. To identify network vulnerabilities
 - D. To manage DNS settings

13. The "ping" command is commonly used when setting up a network. Pick the reason why you would use it.
- A. To measure the time it takes to download a file
 - B. To encrypt network traffic
 - C. To create a virtual network
 - D. To send a message to a remote device and check for a response
14. In the context of network types, what does "CAN" typically stand for?
- A. Campus Area Network
 - B. Controller Area Network
 - C. Corporate Access Network
 - D. Centralized Area Network
15. Which network connection media is most suitable for long-distance data transmission and high-speed internet connections?
- A. Twisted pair cable
 - B. Coaxial cable
 - C. Fiber optic cable
 - D. USB cable
16. As a student you are given the below cables to use during your practical exams. Choose which one is not a network connection media
- A. Ethernet cable
 - B. Fiber optic cable
 - C. Wi-Fi
 - D. USB cable
17. What technology is often used to connect a laptop to an external hard drive or a keyboard and mouse to a computer?
- A. Ethernet
 - B. USB
 - C. Wi-Fi
 - D. ISDN
18. St Veronica Hospital had a link failure in their network. Pick the network architecture that would help them reroute traffic quickly.
- A. Bus
 - B. Client-Server
 - C. Mesh
 - D. Ring

19. _____ is a device commonly used to extend the range of a wireless network, allowing devices to connect in areas with a weak signal.
- A. Repeater
 - B. Switch
 - C. Hub
 - D. Bridge
20. When assigning IP addresses _____ is used to ensure they are within the correct IP range?
- A. DNS Server
 - B. Network Scanner
 - C. Cable Tester
 - D. DHCP Server

SECTION B: 40 MARKS

Attempt ALL questions in this section

21.

- a) Name FOUR things one will see in a network test report (4 Marks)
- b) Khwatenge wants to set up a network in his organization. State THREE essential components he will require. (3 Marks)

22.

- a)
 - i. Define a network operating system (2 Marks)
 - ii. Give THREE ways a network Operating system is used in a business environment. (3 Marks)

- b) Give FOUR reasons why it is important to connect network devices correctly. (4 Marks)

23. Peter a network designer was tasked to set a computer network katakana Technical Institute. He was given a coaxial cable, 5 computers, 1 printer, 2 terminators and drop cables.

- a) With the aid of a diagram, design the most appropriate network topology that Peter could have set up. (4 Marks)
- b) Outline THREE disadvantages of the above topology (3 Marks)

24. Give FOUR roles of IP as used in TCP/IP (4 Marks)

25.

- a) Define troubleshooting as used in networks as used in networks. (2 Marks)
- b) A company has installed a mesh topology. Outline FOUR limitations of this topology. (4 Marks)

26.

- a) An organization that is located in ABC building has designed their network using 10base T Ethernet standard. Explain TWO characteristics of 10base T cables in ethernet technology. (4 Marks)
- b) Name any THREE advantages of fiber optic cables. (3 Marks)

SECTION C: 40 MARKS

Attempt any TWO questions in this section

27.

- a) Your school just visited Matumbai Research institute to look at their network connection. Define any FOUR network devices you will come across during your visit. (8 Marks)
- b) With the aid of a diagram, describe the TCP/IP model (6 Marks)
- c) Adiola bought a desktop computer which she intends to connect to the internet using LAN. Explain the procedure she could use. (6 Marks)

28.

- a) A router handles incoming packets even if the destination network is missing from the routing table. Explain how it does it. (2 Marks)
- b) Discuss FOUR significances of wireless communication as a network connection medium. (8 Marks)
- c) With the aid of a diagram describe the THREE network typologies below
 - i) Point to point topology (2 Marks)
 - ii) Hybrid Topology (2 Marks)
 - iii) Star topology (2 Marks)
- d) Explain TWO characteristics of a Wide Area Network (WAN) (4 Marks)

29.

- a) Define network backbone. (2 Marks)
- b) What is the difference between the *Internet*, *Intranet*, and *Extranet*? (6 Marks)
- c) Outline FOUR major reasons to have network security. (4 Marks)
- d) Configuring Windows clients for TCP/IP involves installing and configuring the TCP/IP network protocol. Outline the steps involved. (6 Marks)
- e) What is the work of “ping” command? (2 Marks)

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