

061306T4CSC

COMPUTER SCIENCE LEVEL 6

ICT/OS/CS/CR/07/6

Understand Networking and Distributed Systems

March/April 2026



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

WRITTEN ASSESSMENT

Time: 2 HOURS

INSTRUCTIONS TO CANDIDATE

1. The paper consists of **TWO** sections: **A** and **B**.
2. Answer **ALL** questions in section A and **ANY THREE** (3) questions in section B.
3. Marks for each question are indicated in the brackets.
4. Candidates are provided with a separate answer booklet
5. Do not write on this question paper.

This paper consists of FIVE (5) printed pages

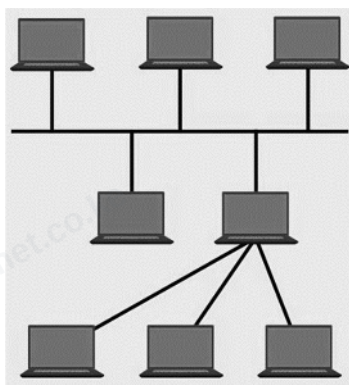
**Candidates should check the question paper to ascertain that all
pages are printed as indicated and no questions are missing.**

SECTION A (40 MARKS)*Answer ALL questions in this section*

1. A technician is asked to set up a small office network. Outline FOUR benefits that office users will gain from the network. (4 marks)
2. During network configuration subnet masks are either configured or default ones applied. State the default ones for Class B and Class C IP addresses. (4 marks)
3. Most institutions' computer labs are equipped with LAN. Identify FOUR physical network components that are found in their configurations. (4 marks)
4. List FOUR importance of IP addresses in network configurations. (4 marks)
5. The diagram illustrates OSI model layers in a systematic order, name the missing layers from the structure. (4 marks)

SN.	LAYER NAME
7	
6	
5	Session
4	
3	Network
2	
1	Physical

6. Transmission modes of data packets in a network setup can be classified as either guided or unguided. Differentiate the two modes. (4 marks)
7. List FOUR properties of the topology illustrated by figure 1. (4 marks)

*Figure 1*

8. The default and primary file system for modern Windows installations being the New Technology File System, most applications software developers ensure compatibility with it. State FOUR reasons why it is used. (4 marks)
9. A network admin responding to a work ticket on a network fault was required to perform a diagnosis on the network. List FOUR common techniques he could use. (4 marks)
10. An organization uses both public and private IP addresses. Explain the difference based on real network usage. (4 marks)
11. Organization networks today require stringent measures to control cybercrimes. Identify FOUR security devices or systems that should be installed. (4 marks)

SECTION B (60 MARKS)

Answer THREE questions in this section

12. a. A company is expanding its offices to different towns and will be required to apply one of various network architecture styles available in networking. Discuss THREE styles the company could apply. (6 marks)
- b. Distributed systems are a collection of independent computers that work together and appear to users as a single coherent system. Such systems exist in different types. Explain FIVE of their types. (10 marks)
- c. Provide a FOUR-step procedure a technician would use to enable the firewall on Windows operating system. (4 marks)
13. a. Prior to networking based assessments, institutions are required to ensure all required tools for network are available and adequate for the learners before the scheduled assessment. Explain FOUR tools that must appear in such a list. (8 marks)
- b. During the configuration of a network using IPv4 settings, the user interacts with the following window



Discuss what is filled in sections named A, B, C, D. (8 marks)

- c. Protocols in networking act as constraints that govern flow of data packets in a guided or unguided network. Expound on TWO major ones. (4 marks)

14. a. In a workshop meant to create awareness on the data communication process, participants were introduced to key components. Explain FOUR key components that may have been mentioned. (8 marks)
- b. Differentiate between centralized and decentralized systems using THREE practical examples. (6 marks)
- c. In the event of a network failure, troubleshooting is done. Explain THREE network tools that can be applied. (6 marks)
15. a. You are required to set up a distributed environment for a small branch office. Discuss the selection of materials, the configuration of network software, and the final testing phase according to standard procedures. (6 marks)
- b. Provided with a Cat 6 UTP cable and RJ45 connectors;
- i. Outline a SIX-step procedure for terminating one end of the cable using the T568B standard. (6 marks)
 - ii. Explain TWO common errors that may occur during termination. (4 marks)
 - iii. Explain how each of the two errors mentioned in question 'ii' affects network performance. (4 marks)