



UGANDA VOCATIONAL AND TECHNICAL ASSESSMENT BOARD
VOCATIONAL EDUCATION AND TRAINING ASSESSMENT

PAPER CODE NCCM-131 NCICT131	PROGRAMME NATIONAL CERTIFICATE IN COMPUTER MAINTENANCE AND REPAIR NATIONAL CERTIFICATE IN INFORMATION COMMUNICATION AND TECHNOLOGY YEAR II, SEMESTER I	DATE THURSDAY 22 ND MAY, 2025
	MODULE NAME COMPUTER NETWORKING	
SERIES MAY-JUNE 2025	PAPER NAME COMPUTER NETWORKING (THEORY)	TIME ALLOWED 2½ HOURS

INSTRUCTIONS TO CANDIDATES

1. This paper consists of **two** sections **A** and **B**.
2. Section **A** is compulsory and carries **20** marks.
3. Section **B** consists of **six** questions. Answer only **four** questions from this section.
4. All questions carry equal marks.
5. All answers to each question should begin on a fresh page.
6. All answers and rough work should be written in the official answer booklet provided.
7. **Do not** write on the question paper.
8. Read other instructions on the answer booklet.

SECTION A- (20 MARKS)

Answer all questions in this section.

Question One

- (a) Define the term **Computer Networking**. (02 marks)
- (b) Outline **three** types of network used in Networking. (03 marks)
- (c) Mention **three** characteristics of Local Area Networks. (03 marks)
- (d) State **three** categories of Network cables. (03 marks)
- (e) List **three** applications provided by Layer 7 of the OSI model. (03 marks)
- (f) Differentiate between **connection oriented** and **connectionless services** as used in networking. (04 marks)
- (g) List **two** purpose of using a Switch in a network structure. (02 marks)

SECTION B - (80 MARKS)

Answer only four questions from this section.

Question Two

NIT Company Ltd intends to hire a network administrator to configure its Local Area Network along with its servers. The Company has contacted you for the opportunity. You are required to;

- (a) Using an illustration, explain **four** network topologies that you would employ. (12 marks)
- (b) Explain **four** factors to consider when choosing the technologies mentioned in 2(a) for the work. (08 marks)

Question Three

- (a) Describe **five** advantages of using internet in your institution. (10 marks)
- (b) Tom has been using his E-mail account for some good years. Recently, he received a notification with a warning danger sign saying "your Gmail storage is 100% full". This is because it has exceeded the default storage capacity.
 - (i) State the default storage capacity of the E-mail in question. (02 marks)
 - (ii) Explain **four** challenges he is likely to face due to the issue above. (08 marks)



Question Four

- (a) Define the term **Wireless Network** as used in networking. (02 marks)
- (b) Explain **two** advantages of using wireless network technology. (04 marks)
- (c) Describe **four** features of wireless network technology. (08 marks)
- (d) Discuss **three** requirements for establishing a wireless network. (06 marks)

(a) Don't require cabling.

(b) Low costs.
Easy to install.
Easy to manage.

Don't use Ethernet cables.
Use radio waves to communicate.

Need a router.
Optic fibre cable - server.

Question Five

- (a) Define the term **Network protocol** as used in networking. (02 marks)
- (b) Distinguish between **routing** and **forwarding** in networking. (04 marks)
- (c) Explain **three** elements of a protocol in computer networking. (06 marks)
- (d) Describe **one** function of each layer of the TCP/IP protocol suite giving an example of each case. (08 marks)

Question Six

- (a) Explain how the following commands can be used to troubleshoot your computer.
- (i) Ping. (02 marks)
 - (ii) IPconfig /release. (02 marks)
 - (iii) IPconfig /renew. (02 marks)
- (b) Discuss the functions of the following networking devices.
- (i) Network Interface Card (02 marks)
 - (ii) Router (02 marks)
 - (iii) Switch (02 marks)
 - (iv) Hub (02 marks)
 - (v) Bridge (02 marks)
- (c) A computer with an IP address 192.168.1.30 and default gateway of 192.168.1.1 had a problem in exchanging packets over the network. You have been contacted for assistance.
- (i) Identify a command used to display all Network Interface Cards IP address details on the screen. (02 marks)
 - (ii) State the class of the IP address for the used computer. (02 marks)

Question Seven

Doreen was trying to connect her laptop to the internet using a wireless network. Unfortunately, her laptop failed to connect to the available wireless access points. She has contacted you for help.

- (a) Explain **four** possible causes of failure to access the wireless Access point. (08 marks)
- (b) Discuss **three** methods of securing the network she was connecting to. (06 marks)
- (c) Describe **three** physical limitations of implementing the network she was connecting to. (06 marks)

END