



**TECHNICAL UNIVERSITY OF MOMBASA**  
**INSTITUTE OF COMPUTING AND INFORMATICS**

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Select department

**UNIVERSITY EXAMINATION FOR:**  
BTIT/SEP2023/J – FT, BSIT/SEP2023/J – FT, BBIT/SEP2023/J – FT,  
BMCS/SEP2023/J – FT, BISSEP2020/J-FT  
CIT 4206 / CIT 4201: NETWORKING ESSENTIALS / COMPUTER  
NETWORKS

END OF SEMESTER EXAMINATION

**SERIES: DECEMBER 2024**

**TIME: 2 HOURS**

**DATE:** Pick Date Select Month Pick Year

**Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions. **Do not write on the question paper.**

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**Question ONE**

- a) Differentiate between the following terms as used in networking:
- i) Collision domain and broadcast domain. (4 marks)
  - ii) Loopback range and auto configuration range. (4 marks)
  - iii) Peer to peer to client – server model (6 marks)
- b) Highlight **four** functions of a Network interface Card. (4 marks)
- c) State and explain any **three** common types of ARP. (6 marks)
- d) Explain **three** main advantages of using wireless transmission in networking? (6 marks)

**Question TWO**

- a) State and explain the functions of any **five** networking devices. (10 marks)
- b) A certain company has an IP address 150.5.0.0 and wishes to break it into 100 networks. Find the ranges of valid IP addresses of the first five subnets. (10 marks)

**Question THREE**

- a) By citing **one** advantage and **one** disadvantage in each case, describe any three types of network topologies. (12 marks)
- b) Describe the differences between TCP and UDP in the TCP/IP suite. (8 marks)

#### **Question FOUR**

By citing one device and one protocol in each layer, describe OSI reference model.

(20 marks)

#### **Question FIVE**

- a) It is important to choose the right topology on how the network will be used. Explain any **three** factors that will influence the choice of the topology. (6 marks)
- b) Briefly explain the situation in which each of the following type of network cable is used. (8 marks)
- i) Straight -through cable
  - ii) Cross over cable
  - iii) Multimode fiber
  - iv) Single - mode fiber
- c) Explain **two** factors to consider when selecting network transmission media. (4 marks)