



TECHNICAL UNIVERSITY OF MOMBASA
INSTITUTE OF COMPUTING AND INFORMATICS

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.**

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)