



MACHAKOS UNIVERSITY

University Examinations for 2022/2023

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

SECOND YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (CLOUD COMPUTING AND INFORMATION
SECURITY)

SCC 204: INTERGRATED NETWORK CABLING

DATE:

TIME:

INSTRUCTIONS

Answer Question One and Any Other Two Questions

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Differentiate between the following
 - i. Full duplex and Half duplex (2 marks)
 - ii. Peer – to – Peer and Client Server Network architecture (2 marks)
- b) Explain role of standards in networking (2 marks)
- c) Differentiate between broadband and baseband signaling (4 marks)
- d) Describe the functions of the following tools:
 - i. Punch down tool (2 marks)
 - ii. Patch Panel (2 marks)
 - iii. Crimping tool (2 marks)
 - iv. Sheath remover (2 marks)
 - v. Cable tester (2 marks)
- e) Highlight all the necessary basic steps and procedures you will undertake in your cable termination (6 marks)
- f) Briefly describe the functions associated with the **Physical layer** of the OSI Model (4 marks)
- g) When running network cabling to a building, there are cautions to take. List and explain any **FOUR** things you shouldn't do when running network cable (4 marks)

QUESTION TWO (20 MARKS)

- a) You and your friend wish to transfer huge files between your two laptops. It would take a lot of time to accomplish this task if you decided to use a memory stick. Your friend asks you to set a simple peer-to-peer network to achieve the objective.
- i. Describe the equipment you require to accomplish this task (4 marks)
 - ii. Explain the type of transmission media you would use (2 marks)
 - iii. Explain the type of cable you will construct (2 marks)
 - iv. In order to confirm that there is communication between the two computers, explain the network troubleshooting commands are you likely to use in this task (2 marks)
 - v. Describe How will you set up the simple peer-to-peer network of the two laptops (2 marks)
 - vi. Explain the configurations are necessary for this task to be accomplishment (4 marks)
- b) Differentiate between CSMA/CD and CSMA/CA Protocol as used in Ethernet (4 marks)

QUESTION THREE (20 MARKS)

- a) Explain **FOUR** achievements of structured cabling in computing (8 marks)
- b) Describe **THREE** Structural differences between CAT 5e and Coaxial cables (6 marks)
- c) Differentiate between signal attenuation and crosstalk (4 marks)
- d) State **TWO** uses for a “straight-through” cable. (2 marks)

QUESTION FOUR (20 MARKS)

- a) Distinguish between THROUGHPUT & BANDWIDTH (4 marks)
- b) Discuss **THREE** main advantages why Fiber Cable is preferred in structured cabling (6 marks)
- c) With the aid of a diagram differentiate between Step – index multimode fiber and graded – index multimode fiber (4 marks)
- d) Clearly illustrate the color code arrangements for both ends 568A & 568B in CROSSOVER and STRAIGHT THROUGH cable termination (6 marks)

QUESTION FIVE (20 MARKS)

- a) Structured cabling operates under standards and rules that ensures compliance and security in data, video and voice transmission. Discuss any of the **THREE** important rules observed and significance of each (6 marks)
- b) You have been tasked with the responsibility to build a network of 18 computers and one network printer;
 - i. Discuss **FIVE** structured cabling tools you would use to come up with the network (10 marks)
 - ii. Give two types of network media of your choice that you would use to suit your work in (i) above (4 marks)