



Kasarani Campus
Off Thika Road
Tel. 2042692 / 3
P. O. Box 49274, 00100
NAIROBI
Westlands Campus
Pamstech House
Woodvale Grove
Tel. 4442212
Fax: 4444175

KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2019/2020 ACADEMIC YEAR
SECOND YEAR, FIRST SEMESTER EXAMINATION
FOR THE BACHELOR OF SCIENCE
(COMPUTER SCIENCE AND MATHEMATICS)

KCS 201 - DATA COMMUNICATION AND NETWORKS

Date: 10th April, 2019
Time: 11.00am – 1.00pm

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- a) Briefly describe the functions of the following Network Devices
- i) Access Point (2 Marks)
 - ii) IPS (2 Marks)
 - iii) Router (2 Marks)
- b) Using suitable examples, describe the functions of the following network server
- i) DHCP (2 Marks)
 - ii) DNS (2 Marks)
 - iii) FTP (2 Marks)
- c) i) Your friend was having a network problem , after checking ip address you saw 169.254.1.20, describe what was the problem , and how can it be solved (5 Marks)
- ii) Describe two ways of securing your Wireless Network (WIFI) (4 Marks)
- d) Describe three advantages of using Server-Client Way over of peer to peer (3Marks)
- e) Using Suitable example, describe the functions of the following command in network troubleshooting
- i) ICMP/Ping (2 Marks)
 - ii) Tracert (2 Marks)
 - iii) Ipconfig/all (2 Marks)

QUESTION TWO (20 MARKS)

- a) Describe two functions of NAT(Network Address Translation) (4 Marks)
- b) Using relevant examples , describe osi model sequentially and how you can use osi to troubleshoot network (16 Marks)

QUESTION THREE (20 MARKS)

You have been hired by Equity Bank as a Network Administrator, you have been assigned the work of subnetting the following

IP Address Network : 192.168.1.0

Class : C

Networks : 40

- a) Get the ranges of the networks , show at least first six network ranges (7 Marks)
- b) Using formula , calculate the valid hosts (5 Marks)
- c) Using formula , calculate the maximum number of networks (5 Marks)
- d) Why are we not assigning the first and the last ip addresses (3 Marks)

QUESTION FOUR (20 MARKS)

- a) What is Green Computing? (2 Marks)
- b) Describe three advantages of Virtualization Technology in a data center. (3 Marks)
- c) Using suitable examples describe various services that are provided by cloud computing in any organization. (15 Marks)

QUESTION FIVE (20 MARKS)

- a) Defining the purposes of the following when assigning IP Address on your PC
 - i) Subnet Mask (3 Marks)
 - ii) Default Gateway (3 Marks)
 - iii) DNS Server (3 Marks)
- b) List two public IP Addresses used by DNS Server (3 Marks)
- c) Describe two rules used when assigning IPV6 (5 Marks)