



Machakos University College

(A Constituent College of Kenyatta University)

UNIVERSITY EXAMINATIONS 2013/2014

SCHOOL OF COMPUTING AND APPLIED SCIENCE

**FIRST YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE (COMPUTER SCIENCE)**

SCO105 DATA COMMUNICATION TECHNOLOGIES

DATE: 9/4/2014

TIME: 8.30 a.m. – 10.30 a.m.

Answer question ONE and any other TWO questions in this paper

QUESTION 1(30MKS)

- a) Explain the term VLANs. (2mks)
- b) Give four advantages of VLANs.(4mks)
- c) Define the term structured cabled system.(2mks)
- d) Differentiate between half and full duplex. (4mks)
- e) Give three advantages of extranets.(3mks)
- f) Give four uses of intranet.(4mks)
- g) Give five limitations of firewalls. (5mks)
- h) List and discuss 2 types of media access control methods used in the LAN. (6mks)

QUESTION 2

- a) Using a diagram explain the 7 layers of the OSI model.(16mks)
- b) List and explain the types of micro waves as used in unbounded media.(4mks)

QUESTION 3

- a) Describe a fiber optic cable and give 2 characteristics.(6mks)
- b) Explain the elements of data communication.(8mks)
- c) Explain the different types of serial transmission and give one advantage of each.(6mks)

QUESTION 4

- a) Discuss virtual private network and give three advantages of VPN.(7mks)
- b) Give five advantages of structured cabling.(5mks)
- c) Discuss the following terms as used in wireless technologies.(8mks)
 - Wi-Fi
 - Cellular
 - Bluetooth
 - WiMAX

QUESTION 5

- a) List and explain three types of connections used in the VLANs. (9mks)
- b) Describe the following WAN technologies. (9mks)
- c) Explain the term Voice over IP. (2mks)