



TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

UNIVERSITY EXAMINATION FOR:
BACHELOR OF TECHNOLOGY IN INFORMATION TECHNOLOGY
(BTIT – Y4 S1)

EIT 4409: NETWORK OPERATING SYSTEMS

END OF SEMESTER EXAMINATION

SERIES: APRIL 2014

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions.

Attempt question **ONE (COMPULSORY)** and any other **TWO** questions

Maximum marks for each part of a question are as shown

This paper consists of **THREE** printed pages

Question One (Compulsory)

- a) Explain the following terms with respect to operating systems:
- (i) Multiprocessing
 - (ii) Free ware
 - (iii) Kernel
 - (iv) Daemon
 - (v) NFS
- (10 marks)**
- b) Using a labeled diagram, describe the structure of an operating system. **(5 marks)**
- c) Describe the activities carried out on a file by an operating system. **(6 marks)**
- d) Outline the functions of the three types of communication ports found in a server. **(3 marks)**

- e) Compare and contrast between peer-to-peer and client server Network Operating Systems. **(6 marks)**

Question Two

- a) Using labeled diagram, differentiate between the monolithic and micro kernel architectures of a network operating system. **(8 marks)**
- b) Outline TWO mechanisms of assigning an IP address to a host (workstation) **(4 marks)**
- c) Describe the structure of a UNIX File System. **(4 marks)**

Question Three

- a) Describe TWO broad approaches to delivery and maintenance of security in UNIX Systems. **(8 marks)**
- b) The Web Server of TUM24 is implemented on a UNIX platform and is assigned provide independent IP Address 204.49.89.7/27. Derive:
- (i) The number of usable IP Address in the Assigned range. **(2 marks)**
 - (ii) The network Address for this subnet **(1 mark)**
 - (iii) The Broadcast Address for this subnet **(1 mark)**
 - (iv) Explain the meaning of the term “Provider Independent” IP Addresses. **(2 marks)**
 - (v) State ONE advantage and ONE disadvantage of provider independent IP Addresses. **(2 marks)**
- c) Explain the functions of the following software utilities:
- (i) Anti-virus software **(2 marks)**
 - (ii) VI Editor **(2 marks)**

Question Four

- a) Explain the functions of the following UNIX commands:
- (i) Host name
 - (ii) Chmod
 - (iii) Netstat
 - (iv) Grep **(8 marks)**
- b) Briefly discuss any FOUR objectives of operating systems security. **(8 marks)**
- c) Outline any FOUR advantages of IPV6 over IPV4 internet addresses. **(4 marks)**

Question Five

- a) Outline FIVE functions of a Network Operating System. **(5 marks)**
- b) Briefly, describe the procedure of creating a new UNIX File System. **(5 marks)**
- c) Explain the functions of the following Networking Utilities: **(4 marks)**
- (i) Trace route
 - (ii) User acid
- d) In UNIX, distinguish between “#boot – r” and “#boot – s” **(2 marks)**
- e) Describe THREE types of file permissions used in UNIX File Systems. **(4 marks)**