



**JARAMOGI OGINGA ODINGA UNIVERSITY  
OF SCIENCE & TECHNOLOGY  
UNIVERSITY EXAMINATIONS 2012/2013  
2<sup>ND</sup> YEAR 2<sup>ND</sup> SEMESTER FOR DIPLOMA IN  
LINUX FOR ENGINEERING AND IT APPLICATIONS  
(KISUMU L.CENTRE)**

**COURSE CODE: ICT 2123**

**TITLE: UBUNTU SERVER ADMINISTRATION AND MAINTENANCE**

**DATE: 13/8/13**

**TIME: 2:00 – 3.30PM**

**DURATION: 1.30 HOURS**

**INSTRUCTIONS**

- 1. This paper consists of TWO section**
- 2. Answer ALL Question in Section A (Compulsory) and ANY other 2 questions in Section B.**
- 3. Write your answers on the answer booklet provided.**

## Section A

### 1. What can't you do with Linux?

- A. Run Windows programs
- B. Play games
- C. Get viruses
- D. Take some bus resources away from an existing device and assign the existing device alternative bus-resources that it can use instead (yet).

### 2. Firefox is an example of a(n)...

- A. Animal
- B. Internet Browser
- C. Internet
- D. E-mail program

### 3. What animal represents Linux?

- A. Bob the Mandrake
- B. George the Wombat
- C. Bill the evil bat of greed
- D. Tux the Penguin

### 4. Is the "i" in Linux pronounced short or long the way Mr. Torvalds says it?

- A. Long
- B. Long in Swedish
- C. Short
- D. Silent

### 5. Linus Torvalds uses.

- A. Mac OSX
- B. Windows XP
- C. Ubuntu
- D. Linux

### 6. What is GNU/Linux?

- A. The official name of the complete Linux OS according to Richard Stallman (the last person in the Windows Killer Presentation, remember??)
- B. A combination of a free software kernel with Linux apps
- C. A fancy way of identifying new distros
- D. A distro of Linux meant for wildebeests

### 7. The Linux kernel was invented by

- A. Linus Pauling
- B. Linus Torvalds
- C. Linus Thorwalds
- D. Linus Van Pelt

### 8. Pop ups in Windows begin to appear on a computer when there is no internet browser open. What's the problem?

- A. Virus
- B. Spyware
- C. Adware
- D. Prank

### 9. Which of the following is not a Linux GUI (Graphical User Interface)?

- A. Xfree86
- B. KDE
- C. Motif
- D. Gnome

10. Which layer of the OSI model supports file transfer and network management?
- 7
  - 6
  - 2
  - 1
11. Which of the following commands provide information on virtual memory, disk access, and CPU use?
- vmstat
  - stat
  - ps
  - uptime
12. \_\_\_\_\_ routers communicate with other routers to calculate routes automatically using routing protocols such as RIP and OSPF.
- Static
  - Manual
  - Direct
  - Dynamic
13. Authority for the internet rests with the \_\_\_\_\_.
- ISOC
  - IETF
  - IAB
  - IRSG
14. The number represented by 10111001 is an odd number.
- True
  - False
15. The subnet mask identifies whether the destination address is local or remote through \_\_\_\_\_.
- de-multiplexing
  - ANDing
  - supernetting
  - broadcasting
16. The \_\_\_\_\_ file holds info on the root name servers needed to initialize the cache of internal domain name servers.
- named.local
  - named.ca
  - named.boot
  - named.conf
17. The command for viewing an arp cache in Linux is \_\_\_\_\_.
- arp -a
  - arp -
  - arp -c
  - arp -e
18. The Linux \_\_\_\_\_ command is used to assign an internet address to a network interface.
- ipconfig
  - winipcfg
  - ifconfig
  - lconfig
19. Which of the following are network management protocols?
- SGMP
  - SNMP
  - CMIP
  - MMC
20. Which of the following OSI layers is concerned with the transmission of unstructured bit stream over a physical link?
- 7
  - 1
  - 6
  - 2
21. What is the default subnet mask for a class C address?
- 255.0.0.0
  - 255.255.0.0
  - 255.255.255.0
  - 255.255.255.255
22. Arp resolves network layer addresses to data link layer addresses.
- True
  - False
23. \_\_\_\_\_ information indicates whether the system has restarted, been reconfigured and then restarted, or is out of service.
- Simplex
  - Base
  - Polling
  - Proxy

**24. To track physical disk activity, which of the following commands would you use?**

- a) pdisk /y
- b) disk /y
- c) disk /active?
- d) diskperf -y

**25. Determine the class of the following IP address:  
10011010 01000111 0010010 11100101**

- a) D
- b) C
- c) B
- d) A

**26. What command is used to count the total number of lines, words, and characters contained in a file?**

- a) countw
- b) wcount
- c) wc
- d) count p
- e) None of the above

**27. What command is used to remove files?**

- A. dm
- B. rm
- C. delete
- D. erase
- E. None of the above

**28. What command is used to remove the directory?**

- A. rdir
- B. remove
- C. rd
- D. rmdir
- E. None of the above

**29. What command is used with vi editor to delete a single character?**

- A. x
- B. y
- C. a
- D. z
- E. None of the above

**30. What operating system was Linux designed to "resemble somewhat"?**

## SECTION B

### Question: 1

Define the following terms (20marks)

- |                                       |                           |
|---------------------------------------|---------------------------|
| 1. Broadcast message                  | 10. Host address          |
| 2. Connection-oriented protocol       | 11. Host name             |
| 3. Connectionless protocol            | 12. IP address            |
| 4. Daemon                             | 13. Network address       |
| 5. Default route                      | 14. Network class         |
| 6. Domain name                        | 15. Router                |
| 7. Dynamic IP address                 | 16. Service               |
| 8. Fully qualified domain name (FQDN) | 17. Static IP address     |
| 9. Gateway                            | 18. Static routing        |
|                                       | 19. Subnetting            |
|                                       | 20. Top-level domain name |

### Question: 2

1. What does the **CNAME** resource record do? (2marks)
2. Name the purpose of a reversed zone when used by the **host** command.(2marks)
3. In which manner would you prompt the name server to reload its configuration and zone files? (1mark)
4. How can you check whether it is possible to reach a certain SMTP server? (2mark)
5. Postfix uses two configuration files: postfix.cf and master.postfix. Correct? (1mark)
6. What is procmail? (1mark)
7. How would you get an overview of all flags that procmail recognizes? (1mark)
8. What two other DNS security strategies can be applied besides the obvious *security by obscurity* measures? (4marks)
9. Which is the most common way to implement authentication for Dovecot? (1mark)
10. Why would you configure and limit the use of the index files using `mbox_min_index_size` when using Dovecot as a POP3 server? (2mark)
11. Why is it necessary - using Courier - to create system aliases? (2mark)
12. What is the purpose of using virtual domains? (1mark)

### Question: 3

1. Is configuring the loopback interface necessary for a system without networking? (2mark)
2. What is the purpose of configuring a default gateway? (2mark)
3. What is the first step in setting up a PPP link? (2mark)
4. Which command is used to scan for available wireless networks? (2mark)
5. What do VPN implementations - like IPSEC, VPND, SSH and (many) Cisco Routers - have in common? (2mark)
6. Name the three protocols which are used in an IPSEC implementation. (2mark)
7. Which tool is the first to use in order to detect multiple use of your IP address in the same network? (2mark)
8. What ICMP message will be sent back to a traceroute client by every system along the path to the destination specified? (2mark)
9. Does pinging a system furnish enough information in order to decide whether a system is on-line or not? (2mark)
10. When will a message within the file named /etc/issue be presented to the user? (2mark)

### Question: 4

1. List the private network address ranges defined by IANA(2mark)
2. What does the acronym NAT stand for? (2mark)
3. Which tool is used to set up, maintain, and inspect the tables of IPv4 packet filter rules in the Linux kernel? (2mark)
4. Name the netfilter CHAINS(2mark)
5. Name the netfilter TABLES. (2mark)
6. What module is needed to perform stateful firewalling on FTP traffic? (2mark)
7. What's the difference between FTP in active and passive mode? (2mark)
8. What protocol is implemented by the routed daemon? (2mark)
9. Describe "DoS with IP address spoofing"(2mark)
10. How can DoS attacks be prevented? (2mark)