



**SLIATE**

**SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION**

(Established in the Ministry of Higher Education, vide in Act No. 29 of 1996)

**Higher National Diploma in Information Technology**

**Second Year, Second Semester Examination – 2017**

**HNDIT2402 - Free and Open Source Systems**

Instructions for Candidates:

No. of questions : 5

Answer four (4) questions including question 01

No. of pages : 4

Time : 2 hours

**Question 1**

**I. Select the most appropriate answer.**

1. Who started Free Software Foundation (FSF)?
  - a) Linus Torvalds
  - b) Richard Stallman
  - c) Eric.S.Raymond
  - d) MIT
2. An example of Closed-source freeware is
  - a) Mysql
  - b) Microsoft office package
  - c) Skype
  - d) Ubuntu
3. Default Linux shell is .....
  - a) nash
  - b) rash
  - c) bash
  - d) lash
4. What is the bash shell key combination for ending a running program and return to the prompt?
  - a) Ctrl + a
  - b) Ctrl + b
  - c) Ctrl + c
  - d) Ctrl + d
5. What is the Linux command to print your working directory?
  - a) pwd
  - b) ped
  - c) wd
  - d) ls
6. Which command is used to change permission of files and directories?
  - a) mv
  - b) chgrp
  - c) chmod
  - d) set

**LIBRARY**  
**Advanced Technological Institute**  
Mabura

7. After typing the command **mkdir -p Data**, what will happen?
- a) Created a directory Data
  - b) Created and Printed a directory Data
  - c) Created a parent directory Data
  - d) Created a private directory Data
8. Which symbol represents the users home directory ?
- a) /
  - b) .
  - c) ..
  - d) ~
9. Which of the flowing statement is correct regarding Samba server in FOSS development?
- a) Samba is a suite of utilities that allows your Linux box to share files and other resources
  - b) It may allow all in home to have their own logins on all the home windows boxes while having their files on the Linux box appear to be located on a new windows drive
  - c) Smb.conf file is the main configuration file of Samba
  - d) All of the above.
10. What is Postfix?
- a) Free and open-source mail transfer agent (MTA) that routes and delivers electronic mail.
  - b) Postfix is suitable if you have no need to check your email in multiple locations.
  - c) Postfix is the most recent version of a standard protocol for receiving e-mail.
  - d) None of the above.
- (2x10=20 marks)

## II. State whether the following sentences are true or false

- a) In Linux, *tar* command is used to create compressed archives that can easily be moved around, from disk to disk, or computer to computer. (.....)
- b) Nonreciprocal Free licenses allow subsequent users to use, modify and redistribute the code with source code (.....)
- c) The proxy server provides management and control over Internet access. (.....)
- d) Cron is a Unix, Solaris utility that allows tasks to be automatically run in the background at regular intervals by the cron daemon.(.....)
- e) By using **rw!** <enter key> command can quits the vi editor without making any changes in file. (.....)

(5 marks)

(Total 25 marks)

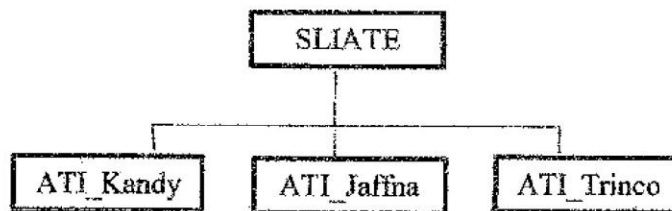
**Question 02**

- I. Define the term Open Source Software. (2 marks)
- II. Write four concepts which are using in FOSS business model (4 marks)
- III. Briefly explain the concept of "Dual Licensing". (4 marks)
- IV. Briefly explain following terms which are used in the Linux architecture. (6 marks)
  - a) Shell
  - b) Kernel
  - c) System Calls
- V. Name three Shell types in Linux. (3 marks)
- VI. Write short notes on following topics. (6 marks)
  - a) GNU project
  - b) Linux Advantages

(Total 25 marks)

**Question 03**

- I. What is the usage of following two terminal commands in Linux (4 marks)
  - a) free
  - b) top
- II. Assumed that you have opened the terminal and now you are in the home directory



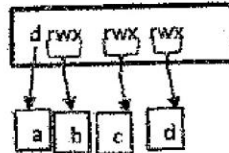
- a) Write down Linux commands to create the above directory structure. (5 marks)
  - b) Write down Linux commands to view the contents of ATI\_Kandy folder. (2 marks)
  - c) What is the output, if you type "pwd" inside ATI\_Kandy folder (2 marks)
  - d) Write down Linux commands to delete the ATI-Kandy folder. (2 marks)
  - e) Assumed you have word document called "studentinfor.doc" inside ATI-Jaffna directory. Write down Linux commands to copy it to the ATI-Trinco directory. (4 marks)
- III. Assumed that you have opened the terminal and now you are in your home directory. In your home directory there is a text file named as *atidata.txt*. (6 marks)
    - a) Write a command to find the word *computer* in *atidata.txt* file using *grep*.
    - b) How to open *myInfo.txt* file in append mode using *cat* command.
    - c) Rename the file *atidata.txt* as *atunformaton.txt* using command.

(Total 25 marks)



#### Question 04

- I. What is the purpose of text editors in Linux? (2 marks)
- II. List any four advantages of vi editor in Linux (4 marks)
- III. vi editor in Linux has three modes namely Command mode, Input mode and Last-line mode. How will you get to them by pressing keys (3 marks)
- IV. What is the purpose of process management in Linux Operating System? (4 marks)
- V. Identify a,b,c,d in flowing figure (4 marks)



- VI. Write down the output of following permission commands for *atiinfo.txt* file (8 marks)  
(Hint – The initial state of the file is *atiinfo.txt* – 0640)
  - a) `Chmod 766 atiinfo.txt`
  - b) `Chmod o+r atiinfo.txt`
  - c) `Chmod u-w atiinfo.txt`
  - d) `Chmod a+rwX atiinfo.txt`

(Total 25 marks)

#### Question 05

- I. What are the functionalities of samba server? (4 marks)
- II. Write two reasons to implement a proxy server in your computer network. (4 marks)
- III. Following segment displays ACCESS\_CONTROL section of the *squid.conf*

```

#
# Add this to the bottom of the ACL section of squid.conf
#
acl home_network src 192.168.1.0/24
acl business_hours time M T W H F 9:00-17:00
acl RestrictedHost src 192.168.1.23
#
# Add this at the top of the http_access section of squid.conf
#
http_access deny RestrictedHost
http_access allow home_network business_hours

```

Briefly explain the use of above configurations in *squid.conf* file in Proxy server. (4 marks)
- IV. Briefly explain the following mail server services (4 marks)
  - a) Postfix
  - b) devcot
- V. What is a web server? Name two open source web servers. (4 marks)
- VI. Briefly explain the functionality of DHCP server (5 marks)

(Total 25 marks)

