



**Higher National Diploma in Information Technology**  
**Second Year, Second Semester Examination – 2015**  
**HNDIT2402 Free and Open Source Systems**

Instructions for Candidates: No. of pages : 4  
All question carry equal marks Time : 2 hours  
Part II carries 05 structured short questions and answer any **four** questions

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Part-I

1. Who is creator of Linux?
  - a) Linus Torvalds
  - b) Richard Stallman
  - c) Eric.S.Raymond
  - d) MIT
  
2. An example of free software license / open source license is
  - a) Apache License
  - b) Oracle License
  - c) Database License
  - d) Software License
  
3. Default Linux shell is .....

  - a) nash
  - b) rash
  - c) bash
  - d) lash

  
4. What is the key combination for logging out current shell session?
  - 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) pcd
  - c) wd
  - d) ls
  
6. Which command is used to change permissions of files and directories?
  - a) mv
  - b) chgrp
  - c) chmod
  - d) set

7. After typing the command **mkdir -p Data**, what would 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 represents the user home directory
  - a) /
  - b) .
  - c) ..
  - d) ~
  
9. What should be used to automatically configure host computers for IP (Internet Protocol)?
  - a) DNS (Domain Name Service)
  - b) SNMP (Simple Network Management Protocol)
  - c) SMTP (Simple Mail Transfer Protocol)
  - d) DHCP (Dynamic Host Configuration Protocol)
  
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 above

#### Part-II

1.
  - i. Define the term Open Source Software (2 marks)
  - ii. What are the four advantages of having open source software (4 marks)
  - iii. Briefly explain the concept of “Dual Licensing” (3 marks)
  - iv. Give Three examples for closed source freeware (3 marks)
  - v. Write short notes on the followings: (8 marks)
    - a) GNU
    - b) FOSS business model

- 2.
- i. Discuss about Linux Shell and Kernel using a diagram. (4 marks)
  - ii. Name three Shell types in Linux. (3 marks)
  - iii. Briefly explain below file management commands. (5 marks)
    - a) ls
    - b) cd
    - c) mkdir
    - d) cp
    - e) mv
  - iv. Assumed you have opened the terminal and now you are in your home directory. In your home directory there is a text file named as *myInfo.txt*. (6 marks)
    - a) Write a command to find the word *ATI* in *myInfo.txt* file using **grep**.
    - b) How to open *myInfo.txt* file in append mode using **cat** command.
    - c) Rename the file *myInfo.txt* as *myTextFile.txt* using command.
  - v. Write suitable Linux shell command to display below user/ memory information. (2 marks)
    - a) Display current user's account name.
    - b) Display all users logged in.

- 3.
- i. Write down appropriate commands in Linux for the following where necessary:
    - a) Clearly discuss the user creation procedure in a terminal with commands  
(*Hint: You are logged in terminal as **Student** user, and root account password is **HNDIT***) (2 marks)
    - b) Create a new user as **beckham** with home also as **beckham** (4 marks)
    - c) Also assign password as **david** to **beckham** (1 mark)
    - d) Create a group called **SPORTS** (1 mark)
    - e) Add **beckham** to **SPORTS** (5 marks)
  - ii. Explain any four advantages of **vi** (4 marks)
  - iii. **vi** editors 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)

- 4.
- i. What is the purpose of process management in Linux Operating System? (4 marks)

- ii. Write down the output of following process management commands? (4 marks)
  - a) Top
  - b) Ps
- iii. Briefly explain the attributes used in the file and directory permissions? (4 marks)
- iv. Describe the following security privileges of two files? (4 marks)

**Sample.txt – 0640**

**Test.java- 766**

- v. **ls -l** command display the current file permission **Test.java** as follows.

- **rw-rw-r—**

Write the file permission commands to complete following tasks? (4 marks)

- a) Add the execute permission for group
- b) Add the write permission for guests.
- c) Remove write permission from all.
- d) Change into **new owner** Saman

5.

- i. What is **Internet Message Access Protocol**? (2 marks)
- ii. What is the major functionality of samba server? (4 marks)
- iii. An additional feature offered by many proxy server applications is caching; such a server is known as a caching proxy server. Explain benefits of having caching proxy server. (4 marks)
- iv. What is the command to remove DHCP server? (3 marks)
- v. What is web server? (3 marks)
- vi. Briefly explain the use of Apache server in FOSS development (4 marks)