UNIVERSITI TENAGA NASIONAL

College of Computer Science and Information Technology

**BACHELOR OF COMPUTER SCIENCE (SYSTEM AND NETWORKING)
(HONS)**

**FINAL EXAMINATION
SEMESTER I 2018/2019**

**SYSTEM ADMINISTRATION
(CSNB113)**

September 2018

Time allowed: 4 hours

INSTRUCTIONS TO CANDIDATES.

1. The total marks for this exam is 100 marks.

2. There are **FOUR (4) SECTIONS** to this paper: Section A, Section B, Section C and Section D

3. All the answers must be written in this questions paper and all the configuration works must be done using the virtualbox.

4. In addition to this question paper, you must also submit the .ovf file.

   DO NOT OPEN THIS QUESTION PAPER UNTIL YOU ARE INSTRUCTED TO DO SO.

THIS QUESTION PAPER CONSISTS OF 8 PRINTED PAGES INCLUDING THIS PAGE.

SECTION A: OPERATING SYSTEM INSTALLATION (2 QUESTIONS, 31 MARKS)

Instruction: Perform the installation of Ubuntu in VirtualBox by following the given instruction below. Please download the Ubuntu 12.04 ISO image from the metalab server using the link given during the exam.

Question 1

Prepare your virtual machine using the following settings:

- Operating System Type : Linux

- Version: Ubuntu 32-bit

- System memory (RAM): 2GB

- Storage: 50GB

[4 marks]

Question 2

Perform the installation of the Ubuntu operating system using the information specified below:

- Hostname : <Your_ID>-Name>   Example: sn123456-rina

- Username: student113

- Password : systemadmin

- Timezone : Kuala Lumpur

- Set proxy server : http://tmg.uniten.edu.my:8080

- Partition settings are based on the table below:

Size	Use as	Primary / Logical	Mount point	Start at
1GB	Ext4 journaling file system	Primary	/boot	Beginning
3GB	swap area	Primary	-	Beginning
8GB	Ext4 journaling file system	Primary	/	Beginning
35GB	Ext4 journaling file system	Logical	/home	Beginning
Balance	FAT32 file system	-	Do not mount it	-

- Select the "OpenSSH" and "LAMP server" for package selection
- Leave the MySQL password blank
- Make your server visible to the whole network of UNITEN by giving it a public IP address.

[27 marks]

SECTION B: OPERATING SYSTEM CONFIGURATION (4 QUESTIONS, 33 MARKS)

Instruction: Configure the operating system that you have just installed according to the specification below.

Question 1

Add the user configuration as specifies below:

(a)   Add user with the username "*harry*" and password "*potter*"

(b)   Add a user with the username "*hermione*" and password "*hogwarts*"

(c)   Give the sudo permission to "*harry*"

[6 marks]

Question 2

File and directory management:

(a)   Create new directories and files as specified by the table below.

No	Directory Name	Parent Directory	File	Data
1	log	home/*student113*	boot_log.txt	Data at boot.log
2	hostname	home/*student113*	host.txt	server hostname
3	project	home/*student113*	history.docx	List of command that have been use before.
4	document	home/*student113*	(none)	
5	myinfo	home/*student113*/ document	info.txt	Put your name, ID, current address and supervisor name.
6	systeminfo	home/*student113*/ document	hardisk.txt	The course space in hard disk. (df command)
7	date	home/*student113*/ document	date.txt	Current date

[13 marks]

(b)   Change the permission for info.txt so that the owner can write and execute, group can read and execute and others can read only.

[2 marks]

(c)   Change the owner for file hardisk.txt to root.

[2 marks]

(d)   Copy the file date.txt to the directory project.

[2 marks]

Question 3

Services installation and configuration:

(a)   Install two services that is needed in order for you to send an email.

(b)   Send an email to rina@metalab.uniten.edu.my using your server with attachment based on the information below:

- To : Malaysia.

- Subject : My Project Attachment.

- Email Content: Hi Mr. Malaysia, this is a testing email.

- Attachment: history.docx

[4 marks]

(c)   Edit the index.html at /var/www. Change the content "It works" to your name and ID.

[4 marks]

SECTION C: COMMAND LINE QUESTIONS (3 QUESTIONS, 16 MARKS)

<u>**Instruction**</u>**: Answer all of the questions on answer booklet provided.**

Question 1

What do the following **SIX (6)** commands return/display/do:

(a) `who`

(b) `whoami`

(c) `pwd`

(d) `echo "Hi, World!"`

(e) `passwd`

(f) `ls [b]*`

[6 marks]

Question 2

Network configuration:

(a)   Write the name of the file to check for proxy server configuration.

[2 marks]

(b)   If you are from your home directory, write a command to navigate to the location of directory that contained the file in (a).

[2 marks]

Question 3

Services installation and configuration:

(a)   Write a command to upgrade and update the server.

[2 marks]

(b)   Write a command to start ssh server.

[1 mark]

(c)   By using the admin2 account give the command to ssh to another server. The server information is provided below:

(i)   Server IP: 172.20.18.35

(ii)   Username: csnb113

[3 marks]

SECTION D: SCRIPTING QUESTIONS (2 QUESTIONS, 20 MARKS)

Instruction: Answer all of the questions.

Question 1

Write a script to do the backup for the specified directories. Details to be used in the script are provided below.

- Script name : backupusr.sh
- Backup destination : /recover/homerecover.
- File to backup : /home directory
- Backup filename : usrbackup-month-day-year.tar.gz
- Cronjob execute : Every Wednesday at 09.30 am

[10 marks]

Question 2

Write a program in vi or nano to ask user to enter **THREE (3)** integers. By using the arithmetic operation, total up all the numbers, display the result and determine whether the results is odd or even numbers. Make sure your program is executable.

[10 marks]

---End of Questions---