FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA.
SCHOOL OF INFORMATION AND COMMUNICATION TECHNOLOGY
DEPARTMENT OF INFORMATION & MEDIA TECHNOLOGY
SECOND SEMESTER MAKEUP EXAMINATION FOR NUGA PARTICIPANTS
2012/2013 ACADEMIC SESSION

Course Code: *IMT 321* **Course Title:** *System Programming*
Credit Unit: *3* **Time:** *2 Hours.*

Instruction: Answer ONLY four (4) questions with at least ONE question from each of the three sections.

SECTION A

Question 1

a. List five (5) uses of UNIX shell scripting.

b. Explain the meaning of the following built-in variables in Bourne shell:

i. $# ii. $0 iii. $$ iv. $? v. $5 vi. $!

c. Explain how to write and compile C program in UNIX. Use correct command and syntax where necessary.

Question 2

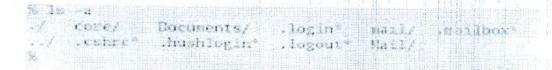a. The snippet below contains some errors, you are expected to identify and explain the errors.

```
!#/bin/sh
imt321(){
COUNTER= $1
ANS=1
while [ $COUNTER -gt 0 ];
ANS=`exp $ANS \* $COUNTER - 1`
COUNTER=`exp COUNTER - 1`
return $ANS
}
imt321 5
```

b. The –x and –n options are normally used when debugging C language in UNIX system. Describe the effect of these options.

SECTION B

Question 3

a.   Mention any 2 types of file recognized in the UNIX file system
b.   What are the dot and dot dot directories indicated in the figure below?

1

```
% ls -a
./      core/     Documents/    .login*    mail/    .mailbox*
../     .cshrc*   .hushlogin*   .logout*   Mail/
%
```

c.   You are required to create a new directory named "IMT_321_Class" which will host the performance of the various students offering the course on a server. As part of the requirements for the director, the administrator of the server should have read, write and execute access on the director, Group and others should be able to read only from the directory. Write a set of commands that can actualize this using
i.   Numerical Method and
ii.   Symbolic method for setting file permission.

SECTION C

Question 4

a. Mr Koledowo wants a script that will help him to delete a file when the name of the file is passed as argument to the script. The script should display a message to confirm if he wants to delete the file and also display a message "File Deleted" upon successful deletion of the file. Write a UNIX script to achieve the task.

b. Explain the meaning of the following commands in Bourne shell script.
i. VAR   ii. export   iii. unset

c.
i. Why do you think shebang is important in Bourne shell script?
ii. Write the correct syntax for shebang.

Question 5

a. List five (5) types of shells in UNIX.

b. Explain the use of following directories in UNIX.
(i) boot   (ii) lib   (iii) kernels   (iv) sbin   (v) proc

c. Write a script that will display all the odd numbers between two integer numbers passed to it from command line. Output from the script should be saved in a file called hikmah.txt.

Best of Luck!