



FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
SCHOOL OF INFORMATION AND COMMUNICATION TECHNOLOGY
DEPARTMENT OF INFORMATION AND MEDIA TECHNOLOGY

SECOND SEMESTER 2015/2016 EXAMINATION

COURSE CODE:	IMT 321
COURSE TITLE:	SYSTEMS PROGRAMMING
CREDIT UNITS:	3
TIME ALLOWED:	2 HOURS
COURSE LECTURER(S):	MR. S.O. GANIYU AND MR. M.E. BIMA
NUMBER OF QUESTIONS:	29 OBJECTIVES AND 5 THEORIES
NUMBER OF PAGES:	4

INSTRUCTIONS

- Answer all questions
- Do **not** use red pen
- Please use a clear handwriting
- This exam is closed book, closed notes, closed laptop and closed cell phone
- Please use non-programmable calculators only

PART A

Section A: Fill in the Gap

1. The two base version of UNIX are _____ and _____.
2. Three types of filesystems supported in UNIX are _____
_____ and _____.
3. The bin directory contains _____.
4. To search for the documentation of a particular UNIX command, type
_____.
5. The 'passwd' is used to _____.
6. The 'mnt' directory contains _____ files.
7. _____ and _____ are three types of files
recognized in UNIX file system.

Consider the long file format below and use it to answer questions 8-10

drwxr-x—x 2 300l lmt321 4096 Apr 25 04:11 Grand

8. The size of the file is _____.
9. What kind of file is Grand?
10. What is the numeric equivalent of group's permission on Grand?

Section B: Multiple Choice Questions

11. Which of the following is not a shell available for use on UNIX?
A. C shell B. Corn shell C. Korn shell D. Bourn shell
12. Which of the following is a category of command used in UNIX?
A. User Command B. useradd C. Add group D. command
13. The command 'whoami' is used to
A. display your username B. Displays active users C. Displays active terminals D. displays user group
14. Every UNIX operating system has _____ at the top level of its hierarchical structure.
A. C: B. ~ C. \ D. /
15. To execute commands which require Administrative privileges, _____ command is used.
A. pseudo B. psudo C. sudo D. seudo
16. The commands 'whoami' and 'who am i' perform same function.
A. True B. False C. Not sure D. It depends



17. When the 'ls -a' command is used, which of the following is displayed in the result? (select most correct)
- A. . B. hidden files C. non hidden files D. A, B and C are correct
18. \$HOME is a/an
- A. directory B. file C. Environmental variable D. search path
19. Entering the command 'vi imt321' on the CLI will do which of the following? (Select all that apply)
- A. Open a CLI interface B. Open a text editor C. Open the file imt321 D. copy vi to imt321
20. The commands 'mv' can be used to. (select all that apply)
- A. Move a file B. Copy a file C. move aa directory D. Rename a file

Section C: Theory

1. Consider the long file listing format below

```
-rw---x-- 2 sict 3001 4092 Apr 25 5:30 Imt321
x
```

- What are the permissions assigned to owner, group and others? (2 Marks)
 - Using numeric method, write the command in the right syntax to change the permission so that **owner** will have read, write and execute. **group** will have read and execute while **others** will maintain the execute permission. (Show all your working) (3 Marks)
2. Write the commands in the right order to perform the following tasks. (3 marks)
- Display current working directory
 - Change directory to /home/documents
 - Create a text file using the vi text editor
3. Briefly explain the operation modes of the vi editor? (2 Marks)

PART B

Section A: Fill in the Gap

- What does # mean in shell script _____. (1 mark)
- _____ operator check if file is an ordinary file as opposed to a directory or special file if yes then condition becomes true. (1 mark)
- _____ and _____ are the two types of user defined variables. (1 mark)



4. _____ command can be used to remove unwanted variable from system memory. (1 mark)
5. String value must be enclosed within double quotes. True / False. (1 mark)
6. The default file name for a C program compiled in UNIX environment is _____. (1 mark)
7. _____ is the operator for closing standard input. (1 mark)
8. _____ keyword is used by function to send a string or value to the function caller. (1 mark)
9. List **two** tools for compiling C program in UNIX environment. (2 marks)

Section B: Theory

1. (a) List any two (2) tools for editing UNIX shell script. (2 marks)
(b) What is the role of shebang in UNIX script? (2 marks)
(c) Describe the four (4) important concepts of UNIX shell scripts. (4 marks)

2. (a) Explain the errors in the Bourne script below: (2 marks)

```
#!/bin/sh
```

```
NUM1 = 5
```

```
NUM2 = 10
```

```
if [ $NUM1 -gt $NUM2 ] then
```

```
echo first entry is greater than second entry
```

- (b) Write a script that computes the **average** of three numbers that it received from command prompt when it runs. The script should write the result to a file called **ans.txt** without overwriting the contents of the file. (5 marks)

Best of luck.