

**KABARAK**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**2010/2011 ACADEMIC YEAR**

**FOR THE DEGREE OF BACHELOR OF COMPUTER SCIENCE**

**COURSE CODE: COMP 321**

**COURSE TITLE: UNIX AND C PROGRAMMING**

**STREAM: Y3S2**

**DAY: THURSDAY**

**TIME: 9.00 – 11.00 A.M.**

**DATE: 17/03/2011**

---

**INSTRUCTIONS:**

1. This paper has two parts: section 'A' and section 'B'.
2. Section 'A' has ONE question which is COMPULSORY and carries 30 marks.
3. Attempt ANY TWO questions section B

**PLEASE TURN OVER**

## SECTION A

### QUESTION ONE (30 MARKS)

- a) 1965 Bell Laboratories joins with MIT and General Electric in the development effort for the new operating system, which would provide multi-user, multi-processor, and multi-level (hierarchical) file system, among its many forward-looking features. Discuss the features of UNIX. (5marks)
- b) Discuss redirection. (3marks)
- c) UNIX is a layered operating system. Discuss the structure of UNIX operating system using a clear diagram. (6marks)
- d) Protocols define a set of rules that each machine must comply with to communicate with another machine in the network. Briefly discuss the following: -
  - i. Domain Name System. (1mark)
  - ii. Host. (1mark)
  - iii. What does hostname do in UNIX? (1mark)
  - iv. IP address. (1mark)
  - v. talk command. (1mark)
- e) There are different loops that can be use in a C program. Explain the while loop and write a simple program to show this. (5marks)
- f) Explain different categories characters in C programming. (3marks)
- g) What is an operating system? What are some of the services an operating system can offer? (3marks)

## SECTION B

### QUESTION TWO (20 MARKS)

- a) The default editor that comes with the UNIX operating system is called vi (visual editor). Using a neatly drawn diagram discuss the different mode in the vi editor. (10marks)
- b) UNIX operating system is full of commands and like the windows operating system it can be used to save, paste, delete and navigating through files. Discuss the following commands as they are used in vi editor.
  - i. The commands **I** and **i** (1mark)
  - ii. The commands **o** and **O** (1mark)
  - iii. Commands **u** and **U** (1mark)
  - iv. Commands **Nx** and **dNw** (1mark)
  - v. Commands **yy** and **p** (1mark)
- c) It has come to your notice that when u open vi editor you forgot to give a name to the file that you have created. Briefly explain how you are going to save this file by the name prog.c and how you can quit vi without saving the changes in the file you have created. (5marks)

### QUESTION THREE (20 MARKS)

- a) Carefully examine the code below and predict its output and write the code so that it can be executed till completion without errors. (5marks)

```
void main(void)
{
    int num;
    printf("\n\n\n\tEnter a number: ");
    scanf("%d", num);

    while(num != 0)
    {
        printf("*");
        num--;
    }

    printf("\n");

    getch();
}
```

- b) Discuss the **for loop** and give it syntax and the flow chart. (5marks)  
c) Write a simple program that calculates the average of N numbers. (5marks)  
d) Describe the characteristics and the purpose of escape sequence characters in C programming language giving examples. (5marks)

### QUESTION FOUR (20 MARKS)

- a) In UNIX users can send and receive messages from one another. Write some note about mail as used in UNIX. (5marks)  
b) It is possible to connect to remote locations using remote connection commands. Explain the functions of the following commands, **ftp**, **finger**, **rcp** giving their syntax. (5marks)  
c) What are tokens in C language? Explain any four types of token. (5marks)  
d) The following commands allow the vi editor screen (or window) to move up or down several lines and to be refreshed.
- i. ^f (1mark)
  - ii. ^b (1mark)
  - iii. ^d (1mark)
  - iv. ^u (1mark)
  - v. ^l (1mark)