

## Quiz 1 (CLO-2)

Course: Operating Systems

Section: BCS-4E

Name:

Course Code: CS 2006

Total Marks:10

RollNo:

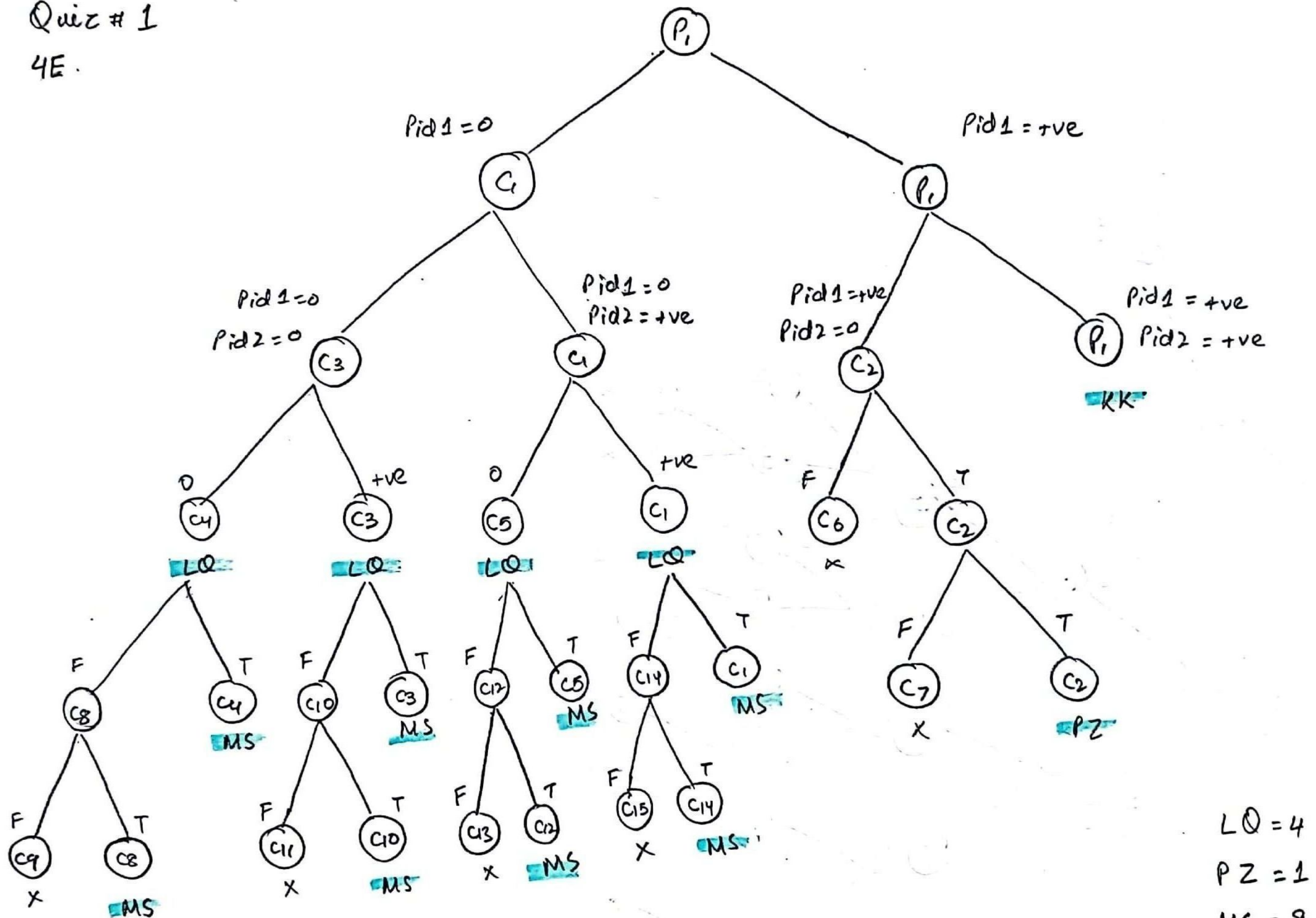
### Question 1: [10 Marks]

Assuming fork() never fails, draw the process tree of the following code, also write how many times "Lahore Qalandars", "Peshawar Zalmi", "Multan Sultans", "Karachi Kings" will be printed on screen. (just write the count)

```
#include <iostream>
#include <unistd.h>
#include <sys/wait.h>
#include <cstring>
using namespace std;
int main() {
    pid_t child_pid1;
    pid_t child_pid2;
    child_pid1 = fork();
    child_pid2 = fork();
    if (child_pid1 == 0) {
        fork();
        cout<<"Lahore Qalandars"<<endl;
    }
    if (child_pid2 == 0 && child_pid1!=0) {
        if(fork()&& fork())
        {
            cout<<"Peshawar Zalmi"<<endl;
        }
    }
    else if(child_pid2 == 0 || child_pid1==0)
    {
        if( fork() || fork())
        {
            cout<<"Multan Sultans"<<endl;
        }
    }
    else
    {
        cout<<"Karachi Kings"<<endl;
    }
    return 0;
}
```



## 4E.



Total = 15 Children + 1 Parent  
Processes = 16 Processes.

$$\begin{aligned} LQ &= 4 \\ PZ &= 1 \\ MS &= 8 \\ KK &= 1 \end{aligned}$$