



United International University
Course: Operating Systems (CSE 4509), Spring 2025
Class Test 1, Section F
Total Marks: 20, Time: 30 minutes

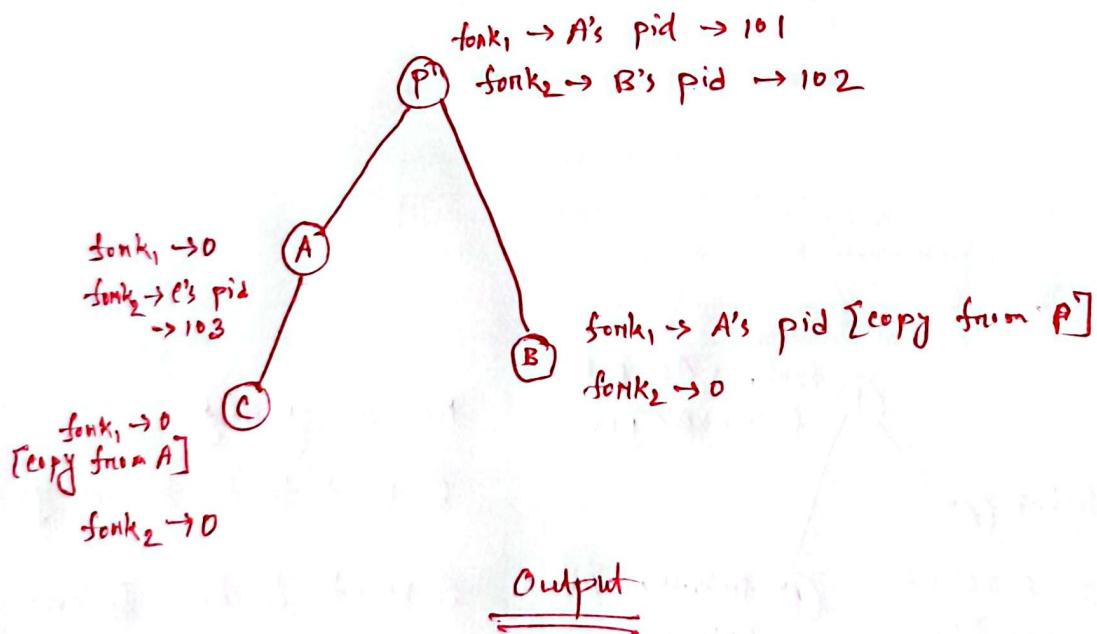
Name		ID	

1) Consider the following program

```
1. if(fork() <= fork())
2. {
3.     printf("We're less than or equal!\n");
4. }else
5. {
6.     printf("Greater!\n");
7. }
```

- a) Draw the process tree for the above program [5]
b) What will be the output of the program? [3]

say, P's pid = 100



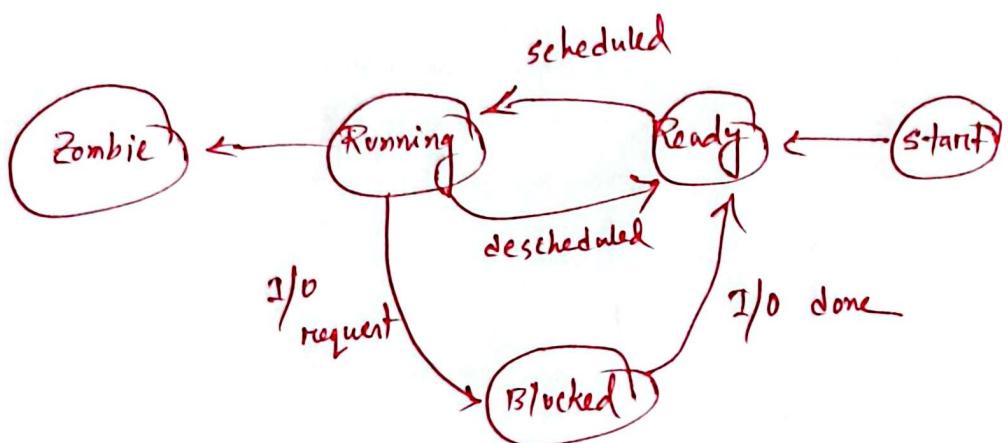
We're less than or equal [P]

We're less than or equal [A]

Greater [B]

We're less than or equal [C]

2) Draw the state diagram of a process showing necessary transitions. [4]



3) Consider the following program:

```
1.     while(fork () && fork())
2.     {
3.         printf("Forever young\n");
4.         break;
5.     }
6.     printf("I want to be forever young\n");
```

- a) Draw the process tree for the above program [5]
b) What will be the output of the program? [3]

a) Process Tree	b) output
<p>fork₁ → A's pid fork₂ → B's pid</p> <p>fork₁ → 0 as left side 0 means false. so A is 2nd fork call 2nd</p>	<p>Forever young I want to be forever young } P</p> <p>I want to be forever young [B</p> <p>I want to be forever young [E</p>