Assignment 3

1/11/2026

40 Points Possible

Attempt 1

In Progress

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Unlimited Attempts Allowed

25/10/2026 to 3/11/2026

Details

Please submit your answers in a **digitally typed format**. All answers must be typed using a word processor or another appropriate digital tool.

Handwritten answers, photographs, or screenshots of notebook pages will not be accepted.

Please ensure that your answers are clearly organized, readable, and submitted in **PDF format**.

Chapter 3 Exercise Questions

1. Name and describe the different states that a process can exist in at any given time.
2. Explain the difference between an I/O-bound process and a CPU-bound process
3. Ordinarily the exec() system call follows the fork(). Explain what would happen if a programmer were to inadvertently place the call to exec() before the call to fork().
4. Including the initial parent process, how many processes are created by the program below?

```
#include <stdio.h>
#include <unistd.h>
int main() {
    int i;
    for (i = 0; i < 4; i++)
    fork();
    return 0;
}
```

---

5. Using the program below, explain what the output will be at lines X and Y.

```
#include <sys/types.h>
#include <stdio.h>
#include <unistd.h>
#define SIZE 5 int nums[SIZE] = {0,1,2,3,4};
int main() {
        int i; pid t pid;
        pid = fork();
```

```
        if (pid == 0)
        {
            for (i = 0; i < SIZE; i++) {
            nums[i] *= -i;
            printf("CHILD: %d ",nums[i]); /* LINE X */
            }
        }
        else if (pid > 0) {
            wait(NULL);
            for (i = 0; i < SIZE; i++)
            printf("PARENT: %d ",nums[i]); /* LINE Y * /
        }
       return 0;
}
```
