CSE321 Quiz 1

Marks: 10 Time - 20 min

1. In a Linux system, the "**init**" process is responsible for spawning other processes during system startup. You want to run the program "**/bin/bash**". **Mention** the steps the OS needs to perform to execute your command. **[2]**

fork → exec

2. Find the output for the following code: **[5]**

```
#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] *= -nums[i];
         printf("CHILD: %d\n", nums[i]);
      }
   }
   else if (pid > 0)
   {
      wait(NULL);
      for (i = 0; i < SIZE; i++)
         printf("PARENT: %d\n", nums[i]);
   }
   printf("Bye\n");
}
```

CHILD: 0
CHILD: -1
CHILD: -4
CHILD: -9
CHILD: -16
Bye
PARENT: 0
PARENT: -1
PARENT: 2
PARENT: -3
PARENT: 4
Bye

3. Does a child process start executing from the beginning of its text section? **Explain** your reason. **[3]**

No. PCB contains the program counter, copied from parent. So, starts from the same next inst. of parent, i.e. next instruction after fork.