Question 1:

Consider the following struct
struct Student
{
      int studentId;
      double GPA;
};

Write the following pieces of code:

1.Define an array of type struct Student, and size 5.

2. Initialize the array with the following values:
{{456789, 3.5}, {456781, 2.7}, {456782, 4.0}, {456783, 2.8},{456784, 3.2}}

3.
Write the definition for the function
readGrades "int readGrades(struct Student stu[], int sz, FILE *fp);", which receives an array of type struct Student,the maximum number of lines that the array can hold as an int, and an opened FILE pointer. The function reads studentId and GPA from each line in a text file until EOF or maximum number of lines has been read, and copies the values from each line to a Student struct in the array passed to the function. The function returns the number of lines in the file.

4.
Write the definition for the function displayGrades "void displayGrades(const struct Student stu[], int sz);", which receives an array of type struct Student,and the size of the array as an int. The function prints to the screen the studentId and GPA stored in each Student element of the array passed to the function.
Here is the output from displayGrades:
StudentId = 456789 GPA = 3.5
StudentId = 456781 GPA = 2.7
StudentId = 456782 GPA = 4.0
StudentId = 456783 GPA = 2.8
StudentId = 456784 GPA = 3.2

Question 2:
There are 7 statements with mistakes in the following C program. Identify the type of error (Syntactic or Semantic) and circle the statements with mistakes and print the correction above or below the incorrect code:

```c
#include <stdio.h>
struct Employee
{
    char lastName[10];
    int id;
};

void printEmp(const struct Employee*);//this line is correct, no mistakes

int main(void)
{
    Employee bill = ("HowardJohn", 1234);
    printEmp(bill);
    return 0;
}

void printEmp(struct Employee *emp)
{
    printf("%s - %d\n", emp.lastName, emp.id);
}
```

Question 3
Answer the following questions:
1. In one or two sentences explain the purpose of indenting code.

2. In one or two sentences explain the difference between the purpose of comments and the code to which they refer.

3. In one or two sentences explain why const is used to qualify a function parameter.

Question 4

When the following program is run, what is printed? Additionally, describe each line of the code and write the value of each variable if it is applicable.

```c
#include <stdio.h>
int main(void) {
    int i, j;
    int nums[15] = { 10, 20, 30, 40};

    for (i = 3; i >= 0; i--) {
        printf("%d ", nums[i] );
    }
    printf("\n");

    for (i = 3; i > 0; i--) {
        for (j = 0; j < i; j++) {
            printf("%d ", nums[i - j] );
        }
        printf("\n");
    }
}
```