Name:
ID:

Marks: 20   Time: 40 mins

1. Rakib derived the formula for weirdSum as follows:
   $$sum(n) = sum(n-1) + 10\,sum(n-2) + 20$$

   sum(0) = 8
   sum(1) = 10

   Help him complete the recursive function for the above formula.   4

   ```
   int weirdSum(int n){
       /*
           Write your code here.
       */
   }
   ```

2. Hisham wrote the following definition of a struct.
   ```
   struct student {
       char name[30];
       int age;
       int height;
       float cgpa;
   }
   ```

   What is the size of this struct in memory?   3

3. Alin wrote the following code while learning about strings in C. What
   will be the output of the following code?   3

```c
#include<stdio.h>

int main(){
    char str1[8] = "University";

    printf("%s", str1);

    return 0;
}
```

4. Redwan wrote the following code to find 'Series Sum'. What is the issue with this code?   4

```c
#include<stdio.h>

int seriesSum(int n){
    for (int i=0; i<n; i++){
        sum += i;

        if (sum % 6 == 4)
            return sum;
    }

    return sum;
}

int main(){
    int sum = 0;
    sum = seriesSum(4);
    printf("%d\n", sum);
}
```

5. In a database system, the names must be stored so that only the starting letter of each portion of a name is in uppercase. Users, however, can give input in any format. Complete the following code for this specific purpose.   6

```c
#include<stdio.h>

void toProperNameFormat(char name[]){
    int length = sizeof(name) / sizeof(name[0]);

    /*
        Write your code here.
    */

}

int main(){
    char name[20];
    scanf("%s", name);
    toProperNameFormat(name);
    printf("%s", name);
    return 0;
}
```

Note: Portions of a name are separated by space. The name 'Martin Gomz' can be given as input in form, such as, 'Martin Gomez'. 'martin gomez' or 'marTin goMEz'. However, we always need to convert it to 'Martin Gomez'.