UNITED INTERNATIONAL UNIVERSITY

Department of Computer Science and Engineering

Exam: Final Year: 2019 Trimester: Fall Course: CSE 1111/CSI 121

Title: Structured Programming Language Marks: 40 Time: 1 hour 45 min

There are **FIVE** Questions. Answer all of them. Numerical figure in the right margin indicates full marks.

1 a) Show manual tracing for the following program and find output. 4.0

```
#include<stdio.h>
int a, b;
int func1(float x);
void func2(int x, float y);
int main(){
        a=11;
        b=25;
        printf("%d %d\n", b, a);
        a=func1(5.5);
        func2(12, 15.0);
        printf("%d %d\n", a, b);
        return 0;
      }
int func1(float x) {
        b=b*a;
        printf("%f\n", x);
        func2(5, 4.5);
        return b-1;
}
void func2(int x, float y){
        printf("%d  %f\n", x, y);
        return;
}
```

b) Write a program using a user defined functions to perform the following operations 4.0

i) main() reads an integer number from keyboard and passes the number to the user defined function, **int digitSum(int number)** as parameter.

ii) main() calls **int digitSum(int number)** to find the sum of all the digits of the number and returns sum to the main().

iii) main() prints the return value from **int digitPosition(int number)** on monitor.

2 a) Find output for the following program 4.0

```
#include<stdio.h>
void func(int x);
int main(){
        func(3);
        return 0;
}
```

```
void func(int x){

    if (x==1) return;
    else {
        printf("%d", x);
        func(x-1);
        printf("%d", x);
       }
}
```

b) Write a program using a user defined recursive function that adds the entire integer numbers stored in a one dimensional array. Remember that the main() function only reads all the integer numbers from keyboard for the array and prints the addition result on the monitor. 4.0

3 Write a program having the structure student (name, id, marks) to perform the following operations for 4 students 8.0

a) Read name, id, marks of 4 students from keyboard
b) Find the minimum marks and the maximum marks holder students
c) Display the following sample report on monitor:

```
Rahim   10   85.0
Saiham  20   85.4
Sabera  15   82.8
Farhan  18   80.0

Minimum marks holder student:  Farhan  18
Maximum Marks holder student: Saiham  20
```

4 a) What will be the effect of the following program? 4.0

```
#include<stdio.h>
int main(){
        FILE *fp1;
        int i, sum;
        int num[5]={10, 20, 30, 40, 50};
        fp1= fopen("D:\\students\\dest.txt", "w");
        sum=0;
        for(i=4; i>=0; i--){
            if(i%2==0){
                sum=sum+num[i];
                fprintf(fp1, "%d\n", num[i]);
            }
        }
        fprintf(fp1, "%d", sum);
        fclose(fp1);
        return 0;
      }
```

b) Write a program to read two floating numbers from a text file, add both the numbers and show the result on monitor. 4.0

5 a) Find output for the following program 4.0

```
#include<stdio.h>
void change(int *x, int *y){
      *x=*x+10;
       *y=*y-3;
      return;
```

```
}
int main(){
        int a=5; int b=9;
        printf("%d  %d\n", a, b);
        change(&a, &b);
        printf("%d  %d\n", a, b);
        return 0;
}
```

b) Write a program using a user defined function that calculates addition, subtraction, multiplication and division of two integer numbers that are taken from main(). The main() function will print the addition, subtraction, multiplication and division results on monitor. Remember that global variables are not allowed in the program. 4.0