Class Test

[SOA Deemed to be University, ITER]

Subject : PPWC (CSE-3544)

Date : 30/09/2024 Total : 15 Marks Time: 1hr.

Q1.

A. A teacher wants to calculate the average grade of their students. The program should allow the teacher to enter grades one by one, and once they enter -1, the program should calculate and display the average grade. If no grades were entered (only -1), inform the teacher.

Ex: Enter grades one by one (enter -1 to finish): 70 65 80 -1
The average grade is: 71.67

B. What will be the output of this program and explain?

```c
#include <stdio.h>
int main() {
    int x = 1, y = 2, z;
    z = (x++ + y++) * (x + y);
    printf("%d\n", z);
    return 0;
}
```

```c
#include <stdio.h>
int main() {
    int a = 5, b = 10;
    if (a < b && b++ < 15) {
        a++;
    }
    printf("%d %d\n", a, b);
    return 0;
}
```

C. What will be the output of this program and explain?

```c
#include <stdio.h>
int main() {
    int x = 10, y = 20, z = 5;
    for (int i = 0; i < 5; i++) {
        x = (i % 2 == 0) ? (x + 2) : (x - 1);
        y = (i % 3 == 0) ? (y * 2) : (y / 2);
    }
    printf("%d %d\n", x, y);
    return 0;
}
```

```c
#include <stdio.h>
int main() {
    int a = 5;
    for (int i = 0; i < 3; i++) {
        a -= (i + 1);
        printf("%d ", a);
    }
    return 0;
}
```

Q2.

A. Develop a C program that emulates the functionality of an ATM machine, allowing users to perform the following actions : 1. Check their account balance, 2. Deposit funds and 3. Withdraw cash. Utilize a loop to enable users to repeatedly select options until they choose to exit the program.

```
 ATM Machine:
 1. Check Balance
  2. Deposit Money
  3. Withdraw Money
  4. Exit
Enter your choice: 1
Your current balance is: 1000.00
```

```
ATM Machine:
1. Check Balance
2. Deposit Money
3. Withdraw Money
4. Exit
Enter your choice: 2
Enter amount to deposit: 500
Successfully deposited 500.00.
New balance: 1500.00
```

B. What will be the output of this program and explain?

```c
#include <stdio.h>
int main() {
    int sum = 0;
    for (int i = 1; i <= 10; i++) {
        if (i % 3 == 0) {
            continue;
        }
        sum += i;
    }
    printf("%d\n", sum);
    return 0;
}
```

```c
int main() {
    int i = 0, sum = 0;
    while (i < 10) {
        if (i % 2 == 0) {
            i++;
            continue;
        }
        if (i == 7) {
            break;
        }
        sum += i;
        i++;
    }
    printf("Sum: %d\n", sum);
}
```

C. Write a C program that takes an input number and identifies the integer whose factorial produces that number. For example, since 5!=120, the factorial of 120 would return 5. (**Ex:** Input : 120 Output : 5 and Input : 1 Output : 0)