

Progress Evaluation Test - 1
Topic - Data Types, Conditional Logic, Loop
Total Questions - 05
*Total Marks - 100 (20 * 5)*
Time - 50 minutes

N.B. Each question carries 20 points. Answer any 5 of the following questions.

0. What is the output of this program

```
int main()
{
    int a=10, b=25;
    a=b++ + a++;
    b=++b + ++a;
    printf("%d%d \n",a,b);
    return 0;
}
```

1. Write a C program to print the following half diamond number pattern

Input

Input N: 5

Output

```
1
121
12321
1234321
123454321
1234321
12321
121
1
```

2. C program to count frequency of digits in an integer

Input

Input any number: 116540

Output

```
Frequency of 0 = 1
Frequency of 1 = 2
Frequency of 2 = 0
Frequency of 3 = 0
Frequency of 4 = 1
Frequency of 5 = 1
Frequency of 6 = 1
Frequency of 7 = 0
Frequency of 8 = 0
Frequency of 9 = 0
```

3. C program to find prime factors of a number

Input

```
Input any number: 10
```

Output

```
Prime factors of 10: 2, 5
```

N.B. Factors of a number that are prime numbers are called as Prime factors of that number. For example: 2 and 5 are the prime factors of 10.

4. C program to check whether a number is Strong number or not

Input

```
Input number: 145
```

Output

```
145 is STRONG NUMBER
```

N.B. Strong number is a special number whose sum of factorial of digits is equal to the original number. 145 is a strong number. Since, $1! + 4! + 5! = 145$

5. C program to find two's complement of a binary number (Bonus)

Input

Input binary number: 01101110

Output

Twos complement: 10010010

Best of luck.