

Shiv Nadar University

CSD101: Introduction to Computing and Programming

Quiz #1

Max marks: 35

1. (5,5,5=15 points) Answer the following three questions with respect to the VSC program given below.

- (a) What will be printed out if $m = -10$, $n = -20$?
- (b) What is the code from address 15 to 20 doing? Give a short one line answer.
- (c) What is the entire program doing? Give a short one line answer.

(5,5,5=15 points)

2. (2,3,2,4,3,3,3=20 points) The prime factorization of a positive integer $n > 1$ is the sequence of prime number divisors that when multiplied together yield n . Some examples of factorization are given below:

Value of n	Factorization
24	2 2 2 3
60	2 2 3 5
13	13

The C program fragment given below reads a positive integer $n > 1$ and prints out the prime factorization of n on the terminal. There are some missing parts in the program indicated by `??1??` to `??7???`. Fill in those parts suitably so that the program works correctly. Assume that the function `int isPrime(int n);` is available and can be called in the code fragment.

```
int isPrime(int n);//returns True if n is a prime else False
```

```
int nextPrime(int m) {  
    //Returns the smallest prime larger than m  
    do ??1??; while ??2??;  
    return m;  
}
```

```
int main() {  
    int n,factor;  
    printf("Give the +ve integer to be factorized = ");  
    scanf(??3??);//Reads n  
    factor=2;  
    while (??4??) {  
        if (??5??) {  
            printf("%d ",factor);  
            n=??6??;  
        }  
        else factor=??7??;  
    }  
    printf("\n");  
    exit(0);  
}
```

(2,3,2,4,3,3,3=20 points)