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**Assignement-I**  
**National Institute of Technology Silchar**  
**Due on 21 November 2022**

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Subject Code: CS-101  
Semester: 1<sup>st</sup>  
Course: B.Tech

Subject: Introduction to Computer Programming  
Department: CSE  
Section: J

*Answers should be submitted in a scanned copy of the handwritten format.*

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1. What are compiler and interpreter? Outline the difference between compiler and interpreter. What is an assembler?
2. What is the difference between Low-level Language and High-Level Language?
3. What is procedure-oriented language?
4. What are Register, Cache, RAM, ROM, SSD, HDD and Tape? Can we increase the size of the Cache memory to 1GB or more? If so, why do not the vendors do so to increase the speed of computation?
5. What is the difference between constants and variables in C?
6. What is an operating system?
7. What is the difference between `<>` and `" "` in the header file declaration?
8. What is the difference between `#define` and `typedef`?
9. What are scope and visibility in C?
10. What is void data type? Give a suitable example.
11. What is the output of the following C program?

```
(a) #include <stdio.h>
    #define f(x) x+x
    #define h(x) (x+x)
    int main()
    {
        int a=f(4)*f(4);
        int b=h(4)*h(4);
        printf("The value of A= %d\n The value of B=%d\n",a,b);
        return 0;
    }
```

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(b) `#include <stdio.h>`

```
int main()
{
    int a=4;
    printf("The size of char=%ld\n",sizeof(char));
    printf("The size of short int=%ld\n",sizeof(short int));
    printf("The size of unsigned short int=%ld\n",sizeof(unsigned short int));
    printf("The size of a=%ld\n",sizeof(a));
    printf("The size of int=%ld\n",sizeof(int));
    printf("The size of unsigned int=%ld\n",sizeof(unsigned int));
    printf("The size of long int=%ld\n",sizeof(long int));
    printf("The size of unsigned long int=%ld\n",sizeof(unsigned long int));
    printf("The size of long long int=%ld\n",sizeof(long long int));
    printf("The size of float=%ld\n",sizeof(float));
    printf("The size of double=%ld\n",sizeof(double));
    printf("The size of long double=%ld\n",sizeof(long double));
    return 0;
}
```

(c) `#include <stdio.h>`

```
int main()
{
    int a=365,b=10;
    printf("The output of a%%b=%d",a%b);
    print("The output of a^b=%d",a^b);
    return 0;
}
```