SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY

B. TECH. I (Sem. II)

MARCH-2012 (Mid Sem Exam)

Fundamentals of Computer and Programming

Time: **1 Hr.** Total Marks: **30**

Q. 1 Answer the following: **[10]**

1. Explain in brief the classification of computers according to their functionality.
2. Describe different types of registers with their functions used in the processing by computer.
3. Explain different types of ROM.
4. Draw a flowchart to input five numbers through keyboard that compute and display the sum of even number and product of odd number.
5. Explain interconnection of units with CPU.

Q. 2 Answer the followings with necessary steps: **[05]**

1. Add the hexadecimal number $(A27E9)_{16}$ and $(6FB43)_{16}$.
2. Perform $(-48)_{10} - (23)_{10}$ using 2's complement.

Q. 3 Fill in the blanks: **[04]**

1. The format specifier %g is used for ____ data type.
2. The ____ operator returns the number of bytes the operand occupies.
3. The specification %[ ] is used for reading a string that contain ____.
4. Array index should be ___data type.

Q.4 Answer the followings: **[08]**

1. Describe the error, if any:

1. int x=10; float y=4.25; x=y%x;
2. switch(1.2) {....}
3. scanf(\n"%f",root);
4. x=y=z=0.5,2.0.-5.35;

2. Write the output of the following code:

```
main()
{
int x=2,y,z;
-x++;
y = -x++;
printf("%d%d",x,y);
z=x++/--y;
printf("%d",z);
}
```

3. Write the output of the following codes:

a)
```
main()
{
  printf("%c %c",67+32,90-25);
}
```

b)
```
main()
{ int i=1,j=2,k=3;
  printf(" %d", !(j+k)>(i+5));
}
```

4.Write an equivalent C code for the following expression:

Salary = (x!=40) ? ((x<40) ? (4*x+100) : (4.5 *x +150)) : 300;

Q.5 Write the 'C' program: [Any One] **[03]**

1. To generate the series: 9, 28, 65, 126, ... upto 10 terms
2. To generate the pattern :

```
1
1 0
1 1 0
1 1 0 0
1 2 2 1 0
* * *
```