SIDDAGANGA INSTITUTE OF TECHNOLOGY, TUMKUR-3
Department of Computer Science and Engineering

TUTORIAL – 1: Review of C Concepts

Class: III sem ‘ ’ **Subject:** Data Structures **(3**CCI02)

Answer the following Questions:

1. C has been developed by _____ in the year _____ while working at _____.

2. What will be the output of the following programs?

a)
```
main( )
{
   printf(“ %d %d %d %d\n ”,72,072,0x72,0X72);
   printf(“ %d %o %x ”,72,72,72);
}
```

b)
```
main( )
{
float a=5,b=2;
   int c;
 c = a%b;
printf(“%d”,c);
}
```

c)
```
main( )
{
  int q=2,d=3,st;
  st = q * d/4 – 12/12 + 12/3 * 16/d;
  printf(“ st = %d”,st);
}
```

d)
```
main( )
{   int a,b;
a = 5.999999;
b = 5.000001;
printf(“ a=%d b=%d “,a,b);
}
```

e)
```
main( )
{
  float a;
  a = 4/2;
  printf(“ %f %f %f “,a,4/2,4/2.0);
}
```

f)
```
main( )
{
 printf(“ %d “,sizeof(2.0)/sizeof(4));
}
```

g)
```
main( )
{
    int x = 10,y = - 20;
    x = !x;
    y = !y;
    printf(“ x = %d\ny = %d " ,x,y) ;
}
```

h)
```
main( )
{
if(‘Z’ < ‘z’)
  printf(" ABC ") ;
else
   printf(" XYZ ") ;
}
```

i)
```
main( )
{   float a = 0.7;
    if(a < 0.7)
       printf(“ TRUE “);
    else
         printf(“ FALSE “);
}
```

j)
```
main( )
{
     int x = 3;
     x*= x + 4;
   printf(“ x = %d “,x);
}
```

k)
```
#define MESG(m) printf(“m”)
main( )
{
   MESG(“Hello”);
```

l)
```
main( )
{
 char str[ ] = ”C is Case Sensitive”;
printf(“%s\n%s\n%s”,str,str+5,str+10);}
```

m)
```
main( )
```

n)
```
main( )
```

```
{
   int arr1[10],arr2[10],i;
   for(i=0;i<=9;i++)
   {
      arr1[i] = 'A' + i ;
      arr2[i] = 'a' + i ;
      printf(" %d ",arr2[i] – arr1[i]);
   }
}
```

o)
```
main( )
{
   int n[25];
   n[0] = 300;
   n[24] = 500;
   printf(" %d %d ",*n, *(n+24) + *(n+0));
}
```

p)
```
main( )
{
   int arr[ ] = {0,1,2,3,4};
   int i, *ptr;
  for(ptr = arr + 4; ptr=arr; ptr- -)
   printf(" %d", *ptr);
}
```

q)
```
main( )
{
   char a[ ] = "C is a Philosophy of life";
   char  *t,*s,*b;
   s = a;
   b = a + strlen(a) – 1;
   t = b;
    while(s != t)
    {
       printf(" %c ", *s);
       s++;
       printf(" %c ",*t);
       t- -;
    }
}
```

r)
```
main( )
   {
 char  str1[ ]  = "dills";
     char str2[20];
      char str3[20] = "daffo";
     int  val;
val = strcmp(strcat(str3,strcpy(str2,str1)),"Daffodills");
      printf("Value=%d",val);
     }
```

s)
```
main( )
 {
       char  *p;
   p = "Static Allocation";
   printf(" %. 6s ",p);
     }
```

t)
```
main( )
  {
     int  arr[ ] = {0,1,2,3,4};
     int *ptr, i;
     for(ptr = arr + 4,i=0; i<=4; i++)
         printf(" %d ",ptr[-i]);
  }
```

u)
```
main( )
   {
      char  *p = "abcd";
       printf("%s\r%s",p,p);
}
```