C Programming Questions for Practice

1) What is the output of the following Code Snippet ?*

```
#include <stdio.h>
#include <stdio.h>
int f(int n)
{
   if(n <= 1)
      return 1;
   if(n%2 == 0)
      return f(n/2);
   return f(n/2) + f(n/2+1);
}


int main()
{
   printf("%d", f(11));
   return 0;
}
```

a) Stack Overflow
b) 3
c) 4
d) 5
e) None of the above
f)

What is the output of the following Code Snippet ?*

```
#include<stdio.h>
int main(){
   char c=125;
   c=c+3;
   printf("%d",c);
   return 0;
}
```

a) -127
b) 128
c) 0
d) -128
e) None of the above

What is the output of the following Code Snippet ?*

```
#include<stdio.h>
int main(){
int a=2;
   if(a==2){
      a=~a+2<<1;
      printf("%d",a);
   }
   return 0;
}
```

a) 0
b) 1
c) -2
d) -1
e) None of the above

What is the output of the following Code Snippet ?*

```
#include<stdio.h>
void main()
{
  char s[]={'a','b','c','\n','c','\0'};
  char *p,*str,*str1;
  p=&s[3];
  str=p;
  str1=s;
  printf("%d\n",++*p + ++*str1-32);
}
```

a) 79
b) 77
c) 122
d) 127
e) None of the above

What is the output of the following Code Snippet ?*

```
#include<stdio.h>

int main()
{
   char *s = "Geeks Quiz";
   int n = 7;
   printf("%.*s", n, s);
   return 0;
}
```

a) Geeks Quiz
b) Nothing is printed
c) Geeks Q
d) Geeks Qu
e) None of the above

What is the output of the following Code Snippet ?*

```
#include<stdio.h>
int *call();
int main(){
   int *ptr;
   ptr=call();
   printf("%d",*ptr);
   return 0;
}
int * call(){
   int a=25;
   a++;
   return &a;
}
```

a) Compiler Error
b) Run Time Error
c) 25
d) 26
e) None of the above

What is the output of the following Code Snippet ?*

```
#include <stdio.h>
int f(int x, int *py, int **ppz)
{
  int y, z;
  **ppz += 1;
   z  = **ppz;
  *py += 2;
   y = *py;
   x += 3;
   return x + y + z;
}
int main()
{
   int c, *b, **a;
   c = 4;
   b = &c;
   a = &b;
   printf("%d\n", f(c, b, a));
   return 0;
}
```

a) 18
b) 19
c) 21
d) 22
e) 25

What is the output of the following Code Snippet ?*

What is the output of the following program ?

```
#include <stdio.h>
int main(){
  int x = -1, y = 0, z = -1;
  int m = -1, n = 0, o = -1;
  int p = x && y && z++ || x++;
  int q = m++ && ++n || o++;
  printf("\n%d %d %d %d %d %d %d", x, z, p, m, n, o, q);
  return 0;
}
```

a) 0 -1 1 0 1 0 1
b) 0 0 1 0 1 0 1
c) 0 -1 1 0 1 0 -1
d) 0 -1 1 0 1 -1 1
e) None of the above

What is the output of the following Code Snippet ?*

```
#include <iostream>
using namespace std;
int token(char str[])
{
int res = 0;
for (int i=0; str[i] !='\0'; i++)
{
   if (str[i] == '1')
   {
      for (int j=i+1; str[j] !='\0'; j++)
         if (str[j] == '1')
            res++;
   }
}
return res;
}

int main()
{
   char str[] = "0000001";
   cout << token(str);
   return 0;
}
```

a) Count the number of 1's in the Binary String
b) Modify the Binary String by replacing all 0's with 1
c) It sorts the Binary String by moving all 0's to one end and all 1's to the other end
d) It checks if the even bits in the Binary String is 1
e) None of the above

What is the output of the following Code Snippet ?*

What will be output if you will compile and execute the following c code?

```
#include<stdio.h>
#define x 5+2
int main(){
   int i;
   i=x*x*x;
   printf("%d",i);
   return 0;
}
```

a) 343
b) 27
c) 133
d) Compile Error
e) None of the above

Fill in the blanks*

```
void main() {
  int c, *b, ____a, *d;
  c = 4;
  b = &c;
  a = &b;
  b = (int *)_____(sizeof(int));
  *b = 2;
  d = (int *)_____(b, 2*sizeof(int));
  ________("Answer =%d\n", c);
}
```

a) *a, malloc, calloc, scanf
b) *a, malloc, calloc, printf
c) **a, malloc, realloc, printf
d) **a, malloc, calloc, printf
e) None of the above

What is the output of the following Code Snippet ?*

```
#include <stdio.h>
int main() {
   int x = 10;
   int y = (x++, x++, x++);
   printf("%d %d\n", x, y);
   return 0;
}
```

a) 13 12
b) 13 13
c) 12 12
d) 10 10
e) None of the above

What is the output of the following Code Snippet ?*

```
#include<stdio.h>
int main()
{
   struct value
   {
      int bit1:1;
      int bit3:4;
      int bit4:4;
   }bit={1, 2, 13};
   printf("%d, %d, %d\n", bit.bit1, bit.bit3, bit.bit4);
   return 0;
}
```

a) 1, 2, 13
b) 1, 4, 4
c) -1, 2, -3
d) -1, -2, -13
e) None of the above

What is the output of the following Code Snippet ?*

What is the output of the following program ?

```
#include <stdio.h>
int main() {
   int x = 10;

   x = x & 0x0000000C;
   x = x << 3;
   x = x | 0x0000000F;
   x = x ^ 0x0;

   printf("%d", x);
}
```

a) 15
b) 79
c) 94
d) 0
e) None of the above

What is the output of the following Code Snippet ?*

```
# include<stdio.h>
# include<stdlib.h>

void fun(int *a)
{
   a = (int*)malloc(sizeof(int));
}

int main()
{
   int *p;
   fun(p);
   *p = 6;
   printf("%d\n",*p);
   return(0);
}
```

a) 6
b) 0
c) Compile Error
d) Garbage Value
e) None of the above

f) Fill in the blanks*

```
#include <stdio.h>
int main()
{
  FILE *fpin, *fpout;
  char  c;
  fpin = fopen("input.txt", "r");
  fpout = fopen("output.txt", "w");
  c= fgetc(fpin);
  while ( c!= ____ )
  {
  fputc(___, ___);
  c= fgetc(fpin);
  }
  return 0;
}
```

a) Null, fpin, c
b) EOF, c, fpout
c) EOF, c, fpin
d) \n, c, fpout
e) None of the above

What is the output of the following Code Snippet ?*

```
#include<stdio.h>
void swap(char *str1, char *str2)
{
  char *temp = str1;
  str1 = str2;
  str2 = temp;
}
int main()
{
  char *str1 = "Geeks";
  char *str2 = "Quiz";
  swap(str1, str2);
  printf("str1 is %s, str2 is %s\n", str1, str2);
  return 0;
}
```

a) str1 is Quiz, str2 is Geeks
b) str1 is Geeks, str2 is Quiz
c) str1 is Geeks, str2 is Geeks
d) str1 is Quiz, str2 is Quiz
e) None of the above

What is the output of the following Code Snippet ?*

```
#include <stdio.h>
void fun1(int);
void fun2(int);
void fun1 (int n) {
   if (n == 0 ) return;
   printf ("%d" , n);
   fun2 (n - 2);
   printf ("%d" , n);
}
void fun2 (int n) {
   if (n == 0) return ;
   printf ("%d" , n);
   fun1(++n) ;
   printf ("%d" , n);
}
int main()
{
   fun1(5);
   return 0;
}
```

a) 53423122233445
b) 53423120112233
c) 53423122132435
d) 53423120213243
e) None of the above

Fill in the blanks*

The following function computes the maximum value contained in an integer array p[ ] of size n, (n>=1).
The missing loop condition is :

```
int max(int *p, int n) {
    int a=0, b=n-1;
    while ( _________ ) {
    if (p[a] <= p[b]) { a = a+1; }
    else       { b = b-1; }
    }
    return p[a];
}
```

a) a != n
b) b != 0
c) b > (a + 1)
d) b != a
e) None of the above

What is the output of the following Code Snippet ?*

```
#include <stdio.h>
int count = 0;
int total (int v) {
   while (v) {
      count += v & 1;
      v >>= 1;
   }
   return count;
}
void main ( ) {
   static int x = 0;
   int i = 5;
   for ( ; i > 0; i--) {
      x = x + total(i);
   }
   printf ("%d\n", x) ;
}
```

a) 12
b) 31
c) 23
d) 44
e) None of the above

What is the output of the following Code Snippet ?*

What is the output of the program below when you give 66 as the input to scanf ?

```
#include <stdio.h>
int main(){
   int n;
   printf("%d", printf("%d", scanf("%d", &n) + printf("%s", "Amrita")));

   return 0;
}
```

a) Amrita81
b) 18Amrita
c) Amrita71
d) 71Amrita
e) None of the above

What is the output of the following Code Snippet ?*

Consider the size of int as two bytes and size of char as one byte. Predict the output of the following code . Assume that the machine is little-endian

```
#include <stdio.h>
int main()
{
  int a = 300;
  char *b = (char *)&a;
  *++b = 2;
  printf("%d\n",a);
  return 0;
}
```

a) 300
b) 44
c) 556
d) 2
e) None of the above