EXPERINENT NO.9

SOLUTIONS

1. Print the value of variable and address of variable using pointer.

```
#include<stdio.h>
#include<conio.h>
void main()
{
int a=10;
int *p=&a;
clrscr();
printf("a=%d\n",a);
printf("a=%d\n",*p);
printf("a=%d\n",*(*(&p)));
printf("a=%d\n",*(&(*p)));
printf("a=%d\n",*(&a));
printf("a=%d\n",&(*p));  // Wrong method
printf("Adress of a=%u\n",&a);
printf("Address of a=%u\n",p);
printf("Address of a=%u\n",&(*p));
getch();
}
```

2. C program to print size of different types of pointer variables.
(To demonstrate each type of pointer will take same memory space which depends on system architecture)

```
#include<stdio.h>
#include<conio.h>
void main()
{
```

```
int a;

int *pa=&a;

char b='x';

char *pb=&b;

float c=10.01;

float *pc=&c;

double d=10.01;

double *pd=&d;

clrscr();

printf("a=%d\n",sizeof(a));

printf("*pa=%d\n",sizeof(*pa));

printf("b=%d\n",sizeof(b));

printf("*b=%d\n",sizeof(*pb));

printf("c=%d\n",sizeof(c));

printf("*c=%d\n",sizeof(*pc));

printf("d=%d\n",sizeof(d));

printf("*d=%d",sizeof(*pd));

getch();

}
```

3. Write a program to print the elements of a 1D integer array along with memory address of each element using pointer. (use increment operator on pointer to print the address)
   e.g for array containing 10,20,30…output will be
   10 at 65524
   20 at 65526
   30 at 65528……..

```
#include<stdio.h>
#include<conio.h>
void main()
```

```
{
 int a[5]={1,2,3,4,5},*p;
 int i;
p=&a[0];
 clrscr();
 for(i=0;i<5;i++)
 {
 printf("%d at %u",*p,p);
p++;
  }
getch();
}
```

4. Write a program to print the elements of a 1D integer array in reverse order along with memory address of each element using pointer. (use decrement operator on pointer to print the address)
e.g for array containing 10,20,30…output will be

    30 at 65528……..
    20 at 65526
    10 at 65524

```
#include<stdio.h>
#include<conio.h>
void main()
{
 int a[5]={10,20,30,40,50},*p;
 int i;
p=&a[4];
 clrscr();
 for(i=0;i<5;i++)
  {
   printf("%d is at address of %u\n",*p,p);
p--;
  }
getch();
}
```

5. Write a program to print characters in string along with memory addresses of each character
e.g for sting : “hello” output will be
    h at 65524
    e at 65525……..

```
#include<stdio.h>
#include<conio.h>
void main()
{
char a[10]={"hello"},*p;
```

```
int i;
clrscr();
p=&a[0];
for(i=0;i<5;i++)
{
printf("%c is at %u\n",*p,p);
p++;
}
getch();
}
```