Assignment – 20

1. Write a function to swap values of two in variables of calling function. (TSRS)

```c
#include<stdio.h>
void swap(int *a,int *b)
{
    int temp = *a;
    *a = *b ;
    *b = temp;
}
int main()
{
    int a,b;
    printf("Enter two number : ");
    scanf("%d%d",&a,&b);
    printf("Number before swapping is : %d %d \n",a,b);
    swap(&a,&b);
    printf("Number after swapping is  : %d %d \n",a,b);
    return 0;
}
```

2. Write a function to swap strings of two char arrays of calling functions. (TSRS)

```c
#include<stdio.h>
#include<string.h>
void swap(char a[],char b[])
{
    char c[100];
    strcpy(c,a);
    strcpy(a,b);
    strcpy(b,c);
}
int main()
{
    char a[100],b[100];
    printf("Enter First string : ");
    fgets(a,100,stdin);
    printf("Enter second string : ");
    fgets(b,100,stdin);
    printf("String before swapping : %s\t%s ",a,b);
    swap(a,b);
    printf("String after swapping : %s\t%s ",a,b);
    return 0;
}
```

3. Write a function to sort an array of int type values. [void sort(int *ptr,int size);]

```c
#include<stdio.h>
void sort(int *arr,int n)
{
    int i,j,temp;
    for(i=0;i<n-1;i++)
    {
        for(j=i+1;j<n;j++)
        {
            if(arr[i]>arr[j])
```

```c
    {
        temp = arr[i];
        arr[i] = arr[j];
        arr[j] = temp;
    }
    }
}
}
int main()
{
    int n,i;
    printf("Enter size of array : ");
    scanf("%d",&n);
    int arr[n];
    printf("Enter elements of array : ");
    for(i=0;i<n;i++)
        scanf("%d",&arr[i]);
    sort(arr,n);
    printf("After sorting : ");
    for(i=0;i<n;i++)
        printf("%d ",arr[i]);
    return 0;
}
```

4. Write a program in C to demonstrate how to handle the pointers in the program.

```c
#include<stdio.h>
void swap(int *a,int *b)
{
    int temp = *a;
    *a = *b ;
    *b = temp;
}
int main()
{
    int a,b;
    printf("Enter two number : ");
    scanf("%d%d",&a,&b);
    printf("Number before swapping is : %d %d \n",a,b);
    swap(&a,&b);
    printf("Number after swapping is  : %d %d \n",a,b);
    return 0;
}
```

5. Write a program to find the maximum number between two numbers using a pointer.

```c
#include<stdio.h>
int main()
{
    int a,b,max;
    int *x,*y;
    x = &a;
    y = &b;
    printf("Enter two number : ");
    scanf("%d%d",&a,&b);
    if(*x>*y)
        max = *x;
    else
```

```c
        max = *y;
    printf("%d is max",max);
    return 0;
}
```

6. Write a program to calculate the length of the string using a pointer.

```c
#include<stdio.h>
#include<string.h>
int main()
{
    char arr[100];
    int n=0,*ptr;
    ptr = &n;
    printf("Enter string : ");
    fgets(arr,100,stdin);
    for(n;arr[n];n++);
    printf("Length of string is %d ",*ptr-1);
    return 0;
}
```

7. Write a program to count the number of vowels and consonants in a string using a pointer.

```c
#include<stdio.h>
#include<string.h>

int main()
{
    char str[100],*ptr;
    int v=0,c=0;
    printf("Enter string : ");
    fgets(str,100,stdin);
    ptr = str;

    while(*ptr!='\0')
    {
        if(*ptr=='A' ||*ptr=='E' ||*ptr=='I' ||*ptr=='O' ||*ptr=='U'||*ptr=='a'
||*ptr=='e' ||*ptr=='i' ||*ptr=='o' ||*ptr=='u')
            v++;
        else
            c++;
        ptr++;
    }

    printf("Number of Vowels = %d & Consonants = %d ",v,c-1);
    return 0;
}
```

8. Write a program to compute the sum of all elements in an array using pointers.

```c
#include<stdio.h>
int main()
{
    int arr[10],i,*ptr,sum=0;
    printf("Enter 10 element of array : ");
    for(i=0;i<10;i++)
        scanf("%d",&arr[i]);
    ptr = arr;
```

```c
    for(i=0;i<10;i++)
        sum = sum + ptr[i];
    printf("Sum is %d",sum);
    return 0;
}
```

9. Write a program to print the elements of an array in reverse order.

```c
#include<stdio.h>
int main()
{
    int arr[10],i,*ptr;
    printf("Enter 10 elements of array : ");
    for(i=0;i<10;i++)
        scanf("%d",&arr[i]);
    ptr = arr;
    printf("After reversing array is : ");
    for(i=9;i>=0;i--)
        printf("%d ",ptr[i]);
    return 0;
}
```

10. Write a program to print a string in reverse using a pointer.

```c
#include<stdio.h>
#include<string.h>
int main()
{
    char str[100];
    int i;
    printf("Enter string : ");
    fgets(str,100,stdin);
    for(i=0;str[i];i++);
    printf("After reversing : ");
    for(i;i>=0;i--)
        printf("%c ",str[i]);
    return 0;
}
```