Q1:

```
#include<stdio.h>
int main() {
   int i, j, count, temp, number[25];

   printf("How many numbers u are going to enter?: ");
   scanf("%d",&count);

   printf("Enter %d elements: ", count);
   for(i=0;i<count;i++)
      scanf("%d",&number[i]);
   for(i=1;i<count;i++){
      temp=number[i];
      j=i-1;
      while((temp<number[j])&&(j>=0)){
         number[j+1]=number[j];
         j=j-1;
      }
      number[j+1]=temp;
   }

   printf("Order of Sorted elements: ");
   for(i=0;i<count;i++)
      printf(" %d",number[i]);

   return 0;
}
```

Q2:

```
#include<stdio.h>
int main(){
   int i, j, count, temp, number[25];
  printf("How many numbers u are going to    enter?: ");
   scanf("%d",&count);
 printf("Enter %d elements: ", count);
   for(i=0;i<count;i++)
      scanf("%d",&number[i]);
   for(i=0;i<count;i++){
      for(j=i+1;j<count;j++){
         if(number[i]>number[j]){
```

```
            temp=number[i];
            number[i]=number[j];
            number[j]=temp;
          }
      }
    }

    printf("Sorted elements: ");
    for(i=0;i<count;i++)
      printf(" %d",number[i]);

    return 0;
}
```

Q3:

```
#include<stdio.h>

int main(){

    int count, temp, i, j, number[30];

    printf("How many numbers are u going to enter?: ");
    scanf("%d",&count);

    printf("Enter %d numbers: ",count);

    for(i=0;i<count;i++)
    scanf("%d",&number[i]);
    for(i=count-2;i>=0;i--){
      for(j=0;j<=i;j++){
        if(number[j]>number[j+1]){
          temp=number[j];
          number[j]=number[j+1];
          number[j+1]=temp;
        }
      }
    }

    printf("Sorted elements: ");
    for(i=0;i<count;i++)
      printf(" %d",number[i]);
```

```
   return 0;
}
```

Q4:

```
#include<stdio.h>

void mergesort(int a[],int i,int j);
void merge(int a[],int i1,int j1,int i2,int j2);

int main()
{
	int a[30],n,i;
	printf("Enter no of elements:");
	scanf("%d",&n);
	printf("Enter array elements:");

	for(i=0;i<n;i++)
		scanf("%d",&a[i]);

	mergesort(a,0,n-1);

	printf("\nSorted array is :");
	for(i=0;i<n;i++)
		printf("%d ",a[i]);

	return 0;
}

void mergesort(int a[],int i,int j)
{
	int mid;

	if(i<j)
	{
		mid=(i+j)/2;
		mergesort(a,i,mid);
		mergesort(a,mid+1,j);
		merge(a,i,mid,mid+1,j);
	}
}
```

```
void merge(int a[],int i1,int j1,int i2,int j2)
{
	int temp[50];
	int i,j,k;
	i=i1;
	j=i2;
	k=0;

	while(i<=j1 && j<=j2)
	{
		if(a[i]<a[j])
			temp[k++]=a[i++];
		else
			temp[k++]=a[j++];
	}

	while(i<=j1)
		temp[k++]=a[i++];

	while(j<=j2)
		temp[k++]=a[j++];
	for(i=i1,j=0;i<=j2;i++,j++)
		a[i]=temp[j];
}
```

Q5:

```
#include<stdio.h>

void create(int []);
void down_adjust(int [],int);

void main()
{
	int heap[30],n,i,last,temp;
	printf("Enter no. of elements:");
	scanf("%d",&n);
	printf("\nEnter elements:");
	for(i=1;i<=n;i++)
		scanf("%d",&heap[i]);
	heap[0]=n;
	create(heap);
```

```
	while(heap[0] > 1)
	{

		last=heap[0];
		temp=heap[1];
		heap[1]=heap[last];
		heap[last]=temp;
		heap[0]--;
		down_adjust(heap,1);
	}

	printf("\nArray after sorting:\n");
	for(i=1;i<=n;i++)
		printf("%d ",heap[i]);
}

void create(int heap[])
{
	int i,n;
	n=heap[0];
	for(i=n/2;i>=1;i--)
		down_adjust(heap,i);
}

void down_adjust(int heap[],int i)
{
	int j,temp,n,flag=1;
	n=heap[0];

	while(2*i<=n && flag==1)
	{
		j=2*i;
		if(j+1<=n && heap[j+1]>heap[j])
			j=j+1;
		if(heap[i] > heap[j])
			flag=0;
		else
		{
			temp=heap[i];
			heap[i]=heap[j];
			heap[j]=temp;
			i=j;
		}
```

```
        }
}
```