Dynamic memory allocation assignment ;1

Q1)

```
#include<stdio.h>
#include<stdlib.h>
#include<conio.h>
void main()
{
	int *p=NULL;
	int i,n;
	printf("enter the number of elements in array:");
	scanf("%d",&n);
	p=(int*)malloc(n*sizeof(int));
	printf("Enter the array elements");
	for(i=0;i<n;i++)
	{
		scanf_s("%d",(p+i));
	}
	printf("Array elements are:\n");
	for(i=0;i<n;i++)
	{
		printf("%d\n",*(p+i));
	}

}
getch();
```

Q2)

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

```
{
	int *p=NULL;
	int i,n,j,temp;
	printf("enter the number of elements in array:");
	scanf_s("%d",&n);
	p=(int*)malloc(n*sizeof(int));
	printf("Enter the array elements");
	for(i=0;i<n;i++)
	{
		scanf_s("%d",(p+i));
	}
	for(j=0;j<n-1;j++)
	{
		for(i=0;i<n-1;i++)
		{
			if((p+i)>(p+i+1))
			{
				temp=*(p+i);
				*(p+i)=*(p+i+1);
				*(p+i+1)=temp;
			}
		}
	}
	printf("The sorted elements are:")
	for(i=0;i<n;i++)
	{
		printf("%d",(p+i));
	}


}
```

```
getch();



Q4)
#include<stdio.h>
#include<stdlib.h>

void main()
{

        int *ptr=NULL;
        int i,n,max1=0,max2=0;
        printf("enter the number of elements in array:");
        scanf("%d",&n);
        ptr=(int*)malloc(n*sizeof(int));
        printf("Enter the array elements");
        for(i=0;i<n;i++)
        {
                scanf("%d",(ptr+i));
        }
        max1=*ptr;
   max2=*ptr;
   for(i=0;i<n;i++)
   {
      if(*(ptr+i)>max1)
      {
         max1=*(ptr+i);
      }
   }
   for(i=0;i<n;i++)
   {
```

```
        if(max2<*(ptr+i))
      {
         if(*(ptr+i)==max1)
         {
            continue;
         }
         max2=*(ptr+i);
      }
   }
          printf("The second largest element is:%d",&max2);
}
```

Q5)

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

void main()
{

          int *ptr=NULL;
          int i,n;
          printf("enter the number of elements in array:");
          scanf("%d",&n);
          ptr=(int*)malloc(n*sizeof(int));
          printf("Enter the array elements");
          for(i=0;i<n;i++)
          {
                    scanf("%d",(ptr+i));
          }
   printf("the reverse of the given array is:");
   for(i=n;i>=0;i--)
```

```
   {
      printf("%d\n",*(ptr+i));
   }

}
```

Q6)

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

void main()
{

        int *ptr=NULL;
        int i,n,sum=0;
        printf("enter the number of elements in array:");
        scanf("%d",&n);
        ptr=(int*)malloc(n*sizeof(int));
        printf("Enter the array elements");
        for(i=0;i<n;i++)
        {
                scanf("%d",(ptr+i));
        }

   for(i=0;i<n;i++)
   {
      sum=sum+*(ptr+i);
   }
        printf("the sum of the given array is:%d",sum);
}
```

q7)

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

void main()
{

        int *ptr=NULL;
        int i,n,temp,j,rem=0,rev=0;
        printf("enter the number of elements in array:");
        scanf("%d",&n);
        ptr=(int*)malloc(n*sizeof(int));
        printf("Enter the array elements");
        for(i=0;i<n;i++)
        {
                scanf("%d",(ptr+i));
        }
  for(i=0;i<n;i++)
  {
     int num=*(ptr+i);
     while(*(ptr+i)!=0)
     {
        rem=*(ptr+i)%10;
        rev=rev*10+rem;
        *(ptr+i)=*(ptr+i)/10;
     }
     if(num==rev)
     {
        printf("%d number is palindrome at index %d",num,i);
     }
  }
```

```
}
```

Q8)

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

void main()
{

        int *ptr=NULL;
        int i,n,med,temp,j;
        printf("enter the number of elements in array:");
        scanf("%d",&n);
        ptr=(int*)malloc(n*sizeof(int));
        printf("Enter the array elements");
        for(i=0;i<n;i++)
        {
                scanf("%d",(ptr+i));
        }
  med=n/2;
  for(i=0;i<med-1;i++)
  {
    for(j=i+1;j<med;j++)
    {

    if(*(ptr+i)>*(ptr+j))
    {
      temp=*(ptr+j);
```

```
        {
            temp=*(ptr+i);
            *(ptr+i)=*(ptr+j);
            *(ptr+j)=temp;
        }

      }

      }
   }
printf("The sorted elements are:");
for(i=0;i<n;i++)
   {
      printf("%d",*(ptr+i));
   }
}
```

Q9)

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

void main()
{

          int *ptr=NULL;
   int *ptr2=NULL;
          int i,n;
          printf("enter the number of elements in array:");
          scanf("%d",&n);
          ptr=(int*)malloc(n*sizeof(int));
   ptr2=(int*)malloc(n*sizeof(int));
          printf("Enter the array elements");
```

```
        for(i=0;i<n;i++)
        {
                scanf("%d",(ptr+i));
        }
   printf("the elements in first array:\n");
   for(i=0;i<n;i++)
   {
      printf("%d\n",*(ptr+i));

   }
   for(i=0;i<n;i++)
   {
     *(ptr2+i)=*(ptr+i);
   }

   printf("elements in second array:\n");
   for(i=0;i<n;i++)
   {
      printf("%d\n",*(ptr2+i));

   }
}
```

Q10)

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

void main()
{
```

```
int vow=0,cons=0,i=0,n,size=1;
char *str=NULL;
char ch;
str=(char*)malloc(sizeof(char));
*(str+0)='\0';
printf("Enter the elements in string:");
do
{
        scanf("%c",&ch);
        if(ch!='\0')
        {
                size++;
                str=(char*)realloc(str,size*sizeof(char));
                *(str+i)=ch;
                *(str+i+1)='\0';
                i++;
        }

}
while (ch!='\n');
while ((str + i) != '\0' && (str + i) != '\n')


{

        if ((str + i) == 'a' || (str + i) == 'e' || (str + i) == 'i' || (str + i) == 'o' || (str + i) == 'u' ||
(str + i) == 'A' || (s
                tr + i) == 'E' || (str + i) == 'I' || (str + i) == 'O' || (str + i) == 'U')
                vow++;

        else
```

```
                {
                        cons++;
                }
                i++;
        }
        printf("%d\n", vow);
        printf("%d\n", cons);

        free(str);


}
getch();
```

Q11)

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

void main()
{

        int *ptr=NULL;
   int *ptr2=NULL;
        int i,n,j,temp;
        printf("enter the number of elements in array:");
        scanf("%d",&n);
        ptr=(int*)malloc(n*sizeof(int));

        printf("Enter the array elements");
        for(i=0;i<n;i++)
```

```
        {
                scanf("%d",(ptr+i));
        }

  for(i=0;i<n;i++)
  {
    for(j=i+1;j<n-1;j++)
    {
       while(*(ptr+i)%2==0&&*(ptr+j)%2==0&&*(ptr+i)>*(ptr+j))
       {
          temp = *(ptr + i);
                                *(ptr + i) = *(ptr + j);
                                *(ptr + j) = temp;
                        }
                }
        }
        printf("after sorting\n");
        for (i = 0; i < n - 1; i++)
        {
                printf("%d\n", *(ptr + i));
        }
  free(ptr);

}
```

Q12)

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

void main()
```

```
{

        int *ptr=NULL;
   int *ptr2=NULL;
        int i,n,j,temp;
        printf("enter the number of elements in array:");
        scanf("%d",&n);
        ptr=(int*)malloc(n*sizeof(int));

        printf("Enter the array elements");
        for(i=0;i<n;i++)
        {
                scanf("%d",(ptr+i));
        }

   for (i = 0; i < n; i++)
        {
                if (*(ptr + i) % 2 == 0)
                {
                        printf("%d\t", *(ptr + i));
                }
        }
        for (i = 0; i < n; i++)
        {
                if (*(ptr + i) % 2 != 0)
                {
                        printf("%d\t", *(ptr + i));
                }
        }
    free(ptr);
}
```

Q13)

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

void main()
{

        int *ptr=NULL;
   int *ptr2=NULL;
        int i,n,j,temp;
        printf("enter the number of elements in array:");
        scanf("%d",&n);
        ptr=(int*)malloc(n*sizeof(int));

        printf("Enter the array elements");
        for(i=0;i<n;i++)
        {
                scanf("%d",(ptr+i));
        }
   for (i = 0; i < n; i++)
        {
                int count = 0;
                for (j = 0; j < n; j++)
                {
                        if (*(ptr + i) == *(ptr + j))
                        {
                                count++;
```

```
                        }
                }
                if (count == 1)
                {
                        printf("unique element:%d\n", *(ptr + i));
                }
        }
   free(ptr);
}
```

Q14)

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

void main()
{

        int *ptr=NULL;
   int *ptr2=NULL;
        int i,n,j,temp,n1;
        printf("enter the number of elements in array:");
        scanf("%d",&n);
        ptr=(int*)malloc(n*sizeof(int));

        printf("Enter the array elements");
        for(i=0;i<n;i++)
        {
                scanf("%d",(ptr+i));
```

```
}

for (i = 0; i < n; i++)
{
        for (j = 0; j < n; j++)
        {
                if (*(ptr + i) < *(ptr + j))
                {
                        temp = *(ptr + i);
                        *(ptr + i) = *(ptr + j);
                        *(ptr + j) = temp;
                }
        }
}
printf("enter number you want to insert?\n");
scanf("%d", &n1);
for (i = 0; i < n; i++)
{
        if (*(ptr + i) > n1)
        {
                temp = i;
                break;
        }
}
for (i = n; i >= temp; i--)
{
        *(ptr + i) = *(ptr + i - 1);
        if (i == temp)
        {
                *(ptr + i) = n1;
        }
```

```
        }
        printf("array after insertion of elements are:\n");
        for (i = 0; i <= n; i++)
        {
                printf("%d\n", *(ptr + i));
        }
}
```

Q15)

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

void main()
{

        int *ptr=NULL;
   int *ptr2=NULL;
        int i,n,j,temp,del;
        printf("enter the number of elements in array:");
        scanf("%d",&n);
        ptr=(int*)malloc(n*sizeof(int));

        printf("Enter the array elements");
        for(i=0;i<n;i++)
        {
                scanf("%d",(ptr+i));
        }
   printf("enter number you want to delete?\n");
        scanf("%d", &del);
        if (del >= 0 && del < n)
```

```
        {
                for (i = del; i < n; i++)
                {
                        *(ptr + i) = *(ptr + i + 1);
                }
                printf("array after delete of elements are:\n");
                for (i = 0; i < n - 1; i++)
                {
                        printf("%d\n", *(ptr + i));
                }
        }
        else
        {
                printf("position is invalid");
        }
}
```

Q18)

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

void main()
{

        int *ptr=NULL;
   int *ptr2=NULL;
        int i,n,j,flag;
        printf("enter the number of elements in array:");
        scanf("%d",&n);
        ptr=(int*)malloc(n*sizeof(int));
```

```
        printf("Enter the array elements");
        for(i=0;i<n;i++)
        {
                scanf("%d",(ptr+i));
        }

        printf("Enter a value of n:");
        scanf("%d", &n);
        for (i = 0; i < n; i++)
        {
                if (n == *ptr + i)
                {
                        flag = 1;
                        printf("Number is found=%d\n", i);
                        break;
                }
        }
        if (flag == 0)
        {
                printf("Number is not found");
        }
}
```

Q19)

```
#include<stdio.h>
#include<stdlib.h>
void main()
{
   int* p=NULL;
```

```
   int n,i;
   printf("\nenter the number of array elements\n");
   scanf("%d",&n);
   printf("\nenter the array elements\n");
   p=(int*)malloc(n*sizeof(int));
   for(i=0;i<n;i++)
   {
      scanf("%d",p+i);
   }
   for(i=0;i<n;i++)
   {
      printf("\nthe element entered is %d the vacant places in array are %d\n",*(p+i),(n-i));
   }
         free(p);
}
```

Q22)

```
#include<stdio.h>
#include<stdlib.h>
void main()
{   int* p;
   int n,i;
   printf("\nenter the number of array elements\n");
   scanf("%d",&n);
   printf("\nenter the array elements\n");
   p=(int*)malloc(n*sizeof(int));
   for(i=0;i<n;i++)
   {
      scanf("%d",p+i);
   }
   printf("\nthe array elements are\n");
```

```
   for(i=0;i<n;i++)
   {
      printf("%d\n",(*(p+i))*(*(p+i)));
   }
}
```

Q27)

```
#include<stdio.h>
#include<stdlib.h>
void main()
{   int* p;
   int n,i,zero=0,negative=0,positive=0;
   printf("\nenter the number of array elements\n");
   scanf("%d",&n);
   printf("\nenter the array elements\n");
   p=(int*)malloc(n*sizeof(int));
   for(i=0;i<n;i++)
   {
      scanf("%d",p+i);
   }

   for(i=0;i<n;i++)
   {
      if(*(p+i)==0)
      {
         zero++;
      }
      else if(*(p+i)>=0)
      {
         positive++;
```

```
        }
        else
        {
           negative++;
        }
    }
    printf("\npositive are %d\n",positive);
    printf("\nnegative are %d\n",negative);
    printf("\nzeros are %d\n",zero);

}
```

DYNAMIC MEMORY ALLOCATION STRING PART 1;

Q1)

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

void main()
{
        int i=0,n,size=1;
        char *str=NULL;
        char ch;
        str=(char*)malloc(sizeof(char));
```

```
	*(str+0)='\0';
	printf("Enter the elements in string:");
	do
	{
		scanf_s("%c",&ch);
		if(ch!='\0')
		{
			size++;
			str=(char*)realloc(str,size*sizeof(char));
			*(str+i)=ch;
			*(str+i+1)='\0';
			i++;
		}

	}
	while (ch!='\n');
	printf("The string is : %s",str);
	free(str);


}
getch();
```

Q2)

```
#include<stdio.h>
#include<stdlib.h>
void main()
{
	int size=1,i=0,flag;
	char ch;
	char *str=NULL;
```

```
str=(char*)malloc(sizeof(char));
*str='\0';
printf("enter the elements in th string:");
do
{
        scanf("%c",&ch);
        if(ch!='\0')
        {
                size++;
                str=(char*)realloc(str,sizeof(char));
                *(str+i)=ch;
                *(str+i+1)='\0';
                i++;
        }
} while (ch!='\n');
i = 0;
while (*(str + i) != '\0')
{
        while (*(str + i) == '_')
        {
                i++;
        }
        if (*(str + i) != '_' && *(str + i) != '\0')
        {
                flag++;
                if (flag == 1);
                else
                {
                        printf("_");
                }
        }
```

```
                while (*(str + i) != '_' && *(str + i) != '\0')
                {
                        printf("%c", *(str + i));
                        i++;
                }
        }
        free(str);
}
```

Q3)

```
#include<stdio.h>
#include<stdlib.h>
void main()
{
        int size=1,i=0;
        char ch;
        char *str=NULL;
        str=(char*)malloc(sizeof(char));
        *str='\0';
        printf("enter the elements in th string:");
        do
        {
                scanf("%c",&ch);
                if(ch!='\0')
                {
                        size++;
                        str=(char*)realloc(str,sizeof(char));
                        *(str+i)=ch;
                        *(str+i+1)='\0';
                        i++;
```

```
            }
        } while (ch!='\n');
        i = 0;
         int count = 0;
        while (*(str + i) != '\0')
        {
            if (*(str + i) >= 'a' && *(str + i) <= 'z' || *(str + i) >= 'A' && *(str + i) <= 'Z')
            {
                count++;
            }
            i++;
        }
        printf("\n no of character in given string=%d", count);
        free(str);
}
```