Q1) Write C program to interchange values of two numbers using pointers. [10 Marks]

```
#include<stdio.h>
 int main()
{
        int a,b,*p,t,*q;
        printf("Enter a 1st number ");
        scanf("%d",&a);
        printf("Enter a 2st number ");
        scanf("%d",&b);
        printf("Befor 1st number is %d\n 2nd number is %d\n",a,b);
        p = &a;
        q = &b;
        t = *p;
        *p = *q;
        *q = t;
        printf("After 1st number is %d\n 2nd number is %d\n",a,b);

        return 1;
}
```

Q2) write the program to implement macros for example :- define constant and array size ?

```
#include <stdio.h>

#detine N5

int main ()

int a[N],i;

Printf ("Enter I'd integer number \n", N);

for (i=0; i<n; i++)

Scanf("%d",&a[i]);

Printf("array element are:\n");
 for (i=0;i<n; i++)

Printf("%d\n" a[i]);

return 0;
}
```

Q3) write a program to illustrate pointer arithmetic .

```
#include <stdio.h>
int main ()
{
int a, b, *ptr = &a, *ptr 1 =&b",
```

```
Printf ("%u\n", ptr);

Printf ("%u\n", ptr1);

Printf ("%u\n'", ++ptr);

Printf ("%u\n",--ptr);

Printf ("%u\n", ptr+3);

Pointf ("%u\n", ptr -1);

Printt ("%u\n", ptr-ptol);

return 0;
}
```

Q4) write a program to accept an array and print the same using double pointer

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

int x[5],i;

int *ptr, **ptr 1;

Ptr = x;

Ptr 1=&ptr;

Printf("Enter Values \n");
 for (i=0; i<5;i++)

Scanf("%d",&x[i]);

for (i=0;i<5;i++)

Printf ("In%d\n", **(ptr 1));

Ptr ++;

}

}
```

Q5) Write a program to read 1 D array of "n" elements and print the inputted array element (using dynamic memory allocation)

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

```
int a,num, i;

Printf ("Enter number of value \n");

Scanf ("yed", & num);

Printf ("Enter ad values in", num);

a=(int*) malloc (num* size of (int));

for (i=0;i<num; i++)

Scanf ("%d", (ati));

}

for (i=0; i<num, itt)

Printf("\n%d\n",*(a+i));

}

}
```

Q6) write a program to find the length of a string .

Ans :-

```
            #include <stdio.h>
               Void main ()
              {
              int len=a;
           char ch [5] = "Pune";
         int i=0
         for ( i=0 ; i<5 ; i++);
{
        If (ch [i]==’\0’);
      Printf ("%d", len);
   break;
}
 len++
}
```

Q7) write a program to copy a string into another

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

int main()

{
```

```
char S. [12] = "good morning";

Char S2 [12];

for (i=a; S2[i]!= '\0'; ++i)

s2 [i] = S1 [i]

s2[i] = '\0'

printf ("S2 is%s", S2);

returno;

}
```

Q8) Write a program to Calculate Length of the String using a Pointer

```
#include<stdio.h>
#include<string.h>
void main()
{
char str1[20];
int a;
printf("enter string\n");
scanf("%s",str1);
a=strlen(str1);
printf("%d\n",a);
}
int strlen1(char *ptr)
{
int L=10,i;
for(i=0;ptr[i]!='\0';i++)
{
L++;
Ptr++;
}
}
```

Q9) Write a program to store and access "id, name and percentage" for one student.

```
#include <stdio.h>
int main() {
int id;
char name[50];
float percentage;
printf("Enter student ID: ");
scanf("%d", &id);
printf("Enter student name: ");
scanf("%s", name);
printf("Enter student percentage: ");
```

```
scanf("%f", &percentage);
printf("\nStudent Information:\n");
printf("ID: %d\n", id);
printf("Name: %s\n", name);
printf("Percentage: %.2f%%\n", percentage);
return 0;
}
```

Q10) Write a program to declare a structure "employee"(name, age, salary) which contains another structure "address"(house number, street) as member variable. Accept the details of one employee and display it. (using normal variable)

Ans :-

```
    #include <stdio.h>
struct address {
int house_number;
char street[50];
};
struct employee {
char name[50];
int age;
float salary;
struct address add;
};
int main() {
struct employee e;
printf("Enter employee details: \n");
printf("Enter name: ");
scanf("%s", e.name);
printf("Enter age: ");
scanf("%d", &e.age);
printf("Enter salary: ");
scanf("%f", &e.salary);
printf("Enter house number: ");
scanf("%d", &e.add.house_number);
printf("Enter street: ");
scanf("%s", e.add.street);
printf("\nEmployee Details\n");
printf("Name: %s\n", e.name);
printf("Age: %d\n", e.age);
printf("Salary: %.2f\n", e.salary);
printf("Address: %d, %s\n", e.add.house_number, e.add.street);
return 0;
}
```