1. Write a C program using user defined functions to calculate power. The function prototype should be int power(int,int)

```
#include<stdio.h>

int power(int,int);

main()

{

int a,n,p;

printf("enter a,n");

scanf("%d %d",&a,&n);

p=power(a,n);

printf("%d",p);

}

int power(int a,int n)

{

int p=1,i;

for(i=1;i<=n;i++)

{

p=p*a;

}

return p;

}
```

2. Write a C program using user defined functions to calculate factorial of a number

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

```
int factorial(int);
main()
{
int a,n;
printf("enter n");
scanf("%d",&n);
a=factorial(n);
printf("%d",a);
}
int factorial(int f)
{
int i,fact=1;
for(i=1;i<=f;i++)
{
fact=fact*i;
}
return fact;
}
```

3. Write a C program using user defined functions to reverse a given number

```
#include<stdio.h>
int reverse(int);
int main()
{
int a,n;
printf("enter n");
```

```
scanf("%d",&n);
a=reverse(n);
printf("%d",a);
}
int reverse(int x)
{
int rev=0,d;
for(;x!=0;x/=10)
{
d=x%10;
rev=rev*10+d;
}
return rev;
}
```

4. Write a C program using user defined functions to check whether the entered number is prime or not.

```
#include<stdio.h>
int prime(int);
main()
{
int a,n;
printf("enter n");
scanf("%d",&n);
a=prime(n);
```

```
if(a==1)
printf("not prime");
else
printf("prime");
}
int prime(int p)
{
int c=0,i;
for(i=2;i<=p/2;i++)
{
if(p%i==0)
{
c=1;
break;
}
}
return c;
}
```

5. Write a C program using user defined functions to check whether the entered number is perfect number or not

```
#include<stdio.h>
int perfect(int);
int main()
{
int a,n;
```

```
printf("enter n");
scanf("%d",&n);
a=perfect(n);
if(a==1)
printf("perfect");
else
printf("not perfect");
}
int perfect(int p)
{
int c=0,i;
for(i=1;i<p;i++)
{
if(p%i==0)
c=c+i;
}
if(c==p)
return 1;
else
return 0;
}
```

6. Write a C program using user defined functions to check whether the entered number is Armstrong number or not. The Armstrong() function should use the user defined function power(). int Armstrong(int); int power(int,int);

```
#include<stdio.h>
int armstrong(int);
int main()
{
int a,n;
printf("enter n");
scanf("%d",&n);
a=armstrong(n);
if(a==1)
printf("armstrong");
else
printf("not armstrong");
}
int power(int a,int n)
{
int c=1,i;
for(i=1;i<=n;i++)
{
c=c*a;
}
return c;
}
int armstrong(int x)
{
int p=0,d,temp=0;
temp=x;
```

```
while(x!=0)
{
d=x%10;
p=p+power(d,3);
x=x/10;
}
if(temp==p)
return 1;
else
return 0;
}
```

7. Write a C program using user defined functions to find the sum of series. sumofseries()function calls factorial() function to calculate the factorial 1 + x/1! + x2/2! + x3/3! + ……+xn/n! float sumofseries(int,int); int factorial(int);

```
#include<stdio.h>
#include<math.h>
float sumofseries(int,int);
int main()
{
int a,n;
float s;
printf("enter a,n");
scanf("%d %d",&a,&n);
s=sumofseries(a,n);
printf("%f",s);
```

```
}
int factorial(int x)
{
int c=1,i;
for(i=1;i<=x;i++)
{
c=c*i;
}
return c;
}
float sumofseries(int x,int n)
{
int i,y;
float sos=0;
for(i=0;i<=n;i++)
{
y=factorial(i);
sos=sos+(float)pow(x,i)/y;
}
return sos;
}
```