3)
```
#include <stdio.h>
int main()
{
int i, j, n, c = 1;
printf("Enter a number ");
scanf("%d", &n);
for (i = 1; i <= n; i++)
{
    for (j = 1; j <= i; j++)
    {
        printf("%d", c);
        c = c+1;
    }
    printf("\n");
}
return 0;
```

//*
```
1
2 3
4 5 6
7 8 9 10
```
//x

patt.c

4) // Grade System ::

```
#include<stdio.h>
int main()
{
    int cie, see, tot;
    printf("Enter the internal marks out of 50");
    scanf("%d", &cie);
    printf("Enter the semester marks out of 100");
    scanf("%d", &see);
    tot = cie + (see/2);
    if (tot<40)
    printf("Fail");
    else if (tot>=40 && tot<55)
    printf("D");
    else if (tot>=55 && tot<70)
    printf("C");
    else if (tot>=70 && tot<80)
    printf("B");
    else if (tot>=80 && tot<90)
    printf("A");
    else
    printf("Excellent");
}
```

gradeoop.c

5) //* prime between two numbers "; *//

Sol :-

```
#include<stdio.h>
int main()
{
    int i,j,a,b;
    int c=0;
    printf("Enter the first number \n");
    scanf("%d",&a);
    printf("Enter the second number, bigger than first \n");
    scanf("%d",&b);
    for(i=(a+1); i<=b; i++)
    {
        for(j=1; j<=i; j++)
        {
            if(i%j==0)
            c++;
        }
        if(c==2)
        printf("%d \n",i);
    }
}
```

6.6 // Volume & Area of Shapes //

Soln

```
#include <stdio.h>
#include <conio.h>
#include <math.h>
void cylinder();
void cone();
void sphere();
int main()
{
    int i;
    printf("Enter value of n as 0 to exit \n");
    scanf("%d",&i);
    while(i!=0)
    {
        printf("1 for area and volume of cylinder \n");
        printf("2 for area and volume of cone \n");
        printf("3 for area and volume of sphere \n");
        scanf("%d",&i);
        if(i==1)
          cylinder();
      else if(i==2)
          cone();
        else if(i==3)
          sphere();
        else
          break;
    }
    return 0;
```

```
void cylinder()
{
    int r, h;
    printf("Enter the radius & height of cylinder \n");
    scanf("%d %d", &r, &h);
    float a, v;
    a = ((2*3.14*r*h) + (2*3.14*r*r));
    v = (3.14*r*r*r*h);
    printf("Area = %f \n", a);
    printf("Volume = %f \n", v);
}

void sphere()
{
    int r, a;
    printf("Enter the radius ~~height of cone~~ sphere");
    scanf("%d", &r);
    float a, v;
    a = (4*3.14*r*r);
    v = ((4/3)*3.14*r*r*r)
    printf("Area = %f \n", a);
    printf("Volume = %f \n", v);
}

void cone()
{
    int r, h;
    printf("Enter the radius & height of cone");
    scanf("%d, %d", &r, &h);
    float a, v;
    a = (3.14*(r+sqrt((r*r)+(h*h))));
    v = (3.14*r*r*h)/3;
    printf("Area %f \n", a);
    printf("Volume %f \n", v);
}
```

———— ∝ ————

7) // Student & subjects //

Sol:

```
#include <stdio.h>
#include <conio.h>
struct student()
{
    char name[50];
    int d;
};
int main()
{
    int n;
    printf("Enter the no. of students \n");
    scanf("%d",&n);
    int i;
    struct students[n];
    printf("Enter the details of student's subjects \n");
    printf("Enter subject code 1 for Internal things \n");
    printf("Enter subject code 2 for Advanced Java \n");
    printf("Enter subject code 3 for Advanced data structures");
    for(i=0;i<=n;i++)
    {
        printf("Enter details of student, name & subject \n");
        scanf("%s",S[i].name);
        scanf("%d",S[i].d);
    }
    int x;
```

```
printf("Enter the subject code\n");
scanf("%d",&x);
printf("Names of students who selected the given subject
      are:\n");
for(i=0;i<n;i++)
{
    if(s[i].d==x)
      printf("%s\n",s[i].name);
}
int c1=0,c2=0,c3=0;
for(i=0;i<n;i++):
{
    if(s[i].d==1)
      c1++;
    if(s[i].d==2)
      c2++;
    if(s[i].d==3)
      c3++;
}
printf("Total no of students selected for subject one are=
      %d\n",c1);
printf("Total no of students selected for subject two are=%d
      \n", c2);
printf("Total no of students selected for subject three are
      =%d\n",c3);
if(c1<30)
{
    printf("Subject 1 is removed from list, select from
      other two\n");
    x=c1; x=c
```

```
if (c2<30)
{
    printf("Subject 2 is removed from list, select from
            other two \n");
    x=c2;
}
if (c3<30)
{
  printf("Subject 3 is removed from list, select from other
          two \n");
    x=c3;
}

for(i=0;i<n;i++)
{
     if (s[i].d==x)
     {
        printf("Enter the subject code other %d for
                student %s \n",x,s[i].name);
        scanf("%d",s[i].d);
     }
}
 c1=0;
 c2=0;
 c3=0;
 for(i=0;i<n;i++)
 {
     if (s[i].d==1)
       c1++;
     if (s[i].d==2)
       c2++;
     if (s[i].d==3)
       c3++;
```

```
}
printf("Number of students who selected subject 1 are = %d \n", c1);
printf("Number of students who selected subject 2 are = %d \n", c2);
printf("Number of students who selected subject 3 are = %d \n", c3);
if (c1 > 0)
{
    for (i=0; i<n; i++)
    {
        if (s[i].d == 1)
            printf("%s", s[i].name);
    }
}
if (c2 > 0)
{
    for (i=0; i<n; i++)
    {
        if (s[i].d == 2)
            printf("%s", s[i].name);
    }
}
if (c3 > 0)
{
    for (i=0; i<n; i++)
    {
        if (s[i].d == 3)
            printf("%s", s[i].name);
    }
}
return 0;
}
```