Week 2
C Program

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

4.
```c
#include<stdio.h>
int main()
{
    int cie, see, total;        out of 50        out of 100
    printf("enter cie marks, and see marks \n");
    scanf("%d %d", &cie, &see);
    total = cie + (see/2);
    if (total >= 90)
    printf("S grade \n");
    else if(total >= 80)
    printf("A grade \n");
    else if (total >= 70)
    printf("B grade \n");
    else if (total >= 60)
    printf("C grade \n");
    else if (total >= 50)
    printf("D grade \n");
    else if (total >= 40)
```

```c
printf (" E grade \n");
else if ( total sco < 40)
printf (" Fail \n");
return 0;
}
}
```

5.
```c
#include <stdio.h>
int main()
{
    int a, b, i, j, nof;      -(enter the least number
    printf (" Enter 2 integers \n");                first)
    scanf (" %d %d ", &a, &b);

    for ( i=a; i<=b; i++)
    {
        nof = 0;
        for(j=1; j<=i; j++)
        {
            if ( i%j == 0)
            nof++;
        }
        if (nof == 2)
        printf ( "%d \n", i);
    } return 0;
}
```

6.
```c
#include <stdio.h>
int main()
{
    int b; p=1; float r, h, a, v; while(p==1){
    printf (" Enter the number \n");
    printf (" 1- cylinder, 2 - cone, 3 - sphere
    scanf (" %d ", &b);                          0 - stop \n");
        if (a==0)   break;
    switch (b)
    {
```

```c
case 1:
{
    printf("Enter radius & height \n");
    scanf("%f %f", &r, &h);
    a = (2*3.14*r*h) + (2*3.14*r*r);
    v = (3.14*r*r*h);
    printf(" Area = %f, Volume = %f", a, v);
}
break;
case 2:
{
    printf("Enter radius and height \n");
    scanf("%f %f", &r, &h);
    a = (3.14*r)*(r + sqrt(h*h) + (r*r));
    v = (3.14*r*r*h)/3;
    printf(" Area = %f, Volume = %f", a, v);
}
break;
case 3:
{
    printf("Enter radius all Right \n");
    scanf("%f", &r);
    a = 4*3.14*r*r;
    v = (4*3.14*r*r*r)/3;
    printf(" Area = %f, Volume = %f \n", a, v);
}
break;
default:
{
    printf("enter a valid number \n");
}
}
}
return 0;
}
```

7)
```c
#include <stdio.h>
int main()
{
    int n, i, a=0, b=0, c1=0, c2=0, c3=0, x=0, p=0;
    char name[50];
```

```
struct student
{ int elec;
  char name [20];
} ar[100];
printf ("Enter the number of students\n");
scanf ("%d", &n);
for (i=0; i<n; i++)
{
  printf (" Enter %d students name and
   the choice of elective -1-IOT, 2-Advanced
   Java and J2EE or3-Advanced data
   structures \n", i+1); ar[i].name   ar[i].elec
  scanf ( "%s %d ", &name, &elec);
  {
    ar[i].
    if (elect == 1)
    e1++;                          if (e1<=e2 && e1<=e3)
    else if (elec ==2)               min=e1;
    e2++;    ar[i].               else if (e2<=e1 && e2<=e3)
    else if (elec == 3)              min=e2;
    e3++;                         else if (e3<=e2 && e3<=e1)
    }                                min=e3
}
printf (" Enter the course number \n");
scanf ("%d", &x);
printf ("Name of students who have opted for x\n");
for (i=0; i<n; i++)
{
  if ( ar[i]. elec == x)
  printf ( "%s \n", ar[i].name);
}
printf (" Total number of students in 1st
 course is %d \n", e1);
printf (" Total number of students in 2nd
 course is %d \n", e2);
printf (" Total number of students in
 3rd course is %d \n", e3);
if (e1 <3 && e2>=3 && e3>=3)
printf (" course 1 will not be floated. Please
 select from the other 2 courses\n"); p=1;}
else if ( e2 <3 && e1>=3 && e3 >=3)
printf (" course 2 will not be floated.
```

```c
Please select from the other 2 courses \n");p=2;}
else if ( c3<3 && c2>=3 && c1>=3)
{printf ("Course 3 will not be floated.
Please select from the other 2 \n"); p=3; }
else
{
    if ( min(c1, c2, c3) == c1)
    printf (" Please select from course 2 & 3 \n"); p=1;}
    else if ( min(c1,c2,c3) == c2)
    printf (" Please select from course 1 & 3 \n"); p=2;}
    else if ( min(c1,c2,c3) == c3)
    printf (" Please select from course 2 & 3 \n"); p=3;
}

if (p == 1)
{for(i=0; i<n; i++)
    {
        if ( arr[i].elec == 1)
        {printf ("Enter a different course \n", arr[i].name);       Name-%s
        scanf ("arr[i].elec %d ", & arr[i].elec);
        }}}
else if (p == 2)
{
    for( i=0 ; i<n; i++)
    {
        if ( arr[i].elec == 2)       Name-%s
        {printf ("Enter a different course\n", arr[i].name);
        scanf (" %d ", & arr[i].elec);
        }}}
    else if (p == 3)
    {
        for (i=0; i<n; i++)
        {
            if (arr[i].elec==3)
            {printf ("Enter a different course \n", arr[i].name);    Name-%s
            scanf ("%d", & arr[i].elec);
            }}
```

```
    printf (" Students in 1 elective \n");
 for (i=0; i<n; i++)
    { printf(" Students in 1 elective \n");
  if ( ar[i].elec == 1)
  printf (" % s \n ", ar[i].name);

  }
  printf (" Students in 2 elective \n");
  for (i=0; i<n; i++)
  {
  if ( ar[i].elec == 2)
  printf ("  % s \n ", ar[i].name);

  }
  printf (" Students in 3 elective \n");
  for (i=0) i<n; i++)
  {
  if ( ar[i].elec == 3)
  printf (" % s \n", ar[i].name);
  }
  return 0;
  }
```