Lab 2 Solution

Based on Decision Control Statement.

1) Program to check a number is odd or even.

```
#include <stdio.h>
int main ()
{
    int n;
    printf("Enter a number\n");
    scanf("%d",&n);
    if(n%2==0)
    {
        printf("%d is even\n",n);
    }
    else
    {
        printf("%d is odd\n",n);
    }
    return 0;
}
```

1) Program to check a number is largest or smallest among two numbers.

```
#include <stdio.h>
int main ()
{
    int a,b;
    printf("Enter a first number\n");
    scanf("%d",&a);
```

```
	printf("Enter a second number\n");
	scanf("%d",&b);
	if(a>b)
	{
		printf("%d is largest\n",a);
	}
	else
	{
		printf("%d is largest\n",b);
	}
	return 0;
}
```

2) Program to check a number is divisible by 5 but not 7.

```
#include <stdio.h>
int main ()
{
	int n;
	printf("Enter a number\n");
	scanf("%d",&n);
	if(n%5==0 && n%7!=0)
	{
		printf("%d is divisible by 5 but not 7\n",n);
	}
	else
	{
		printf("Error\n");
	}
	return 0;
}
```

3) Program to check a year is leap year or not.

```
#include <stdio.h>
int main() {
  int year;
  printf("Enter a year: ");
  scanf("%d", &year);
  if (year % 400 == 0)
  {
    printf("%d is a leap year.", year);
  }
  else if (year % 100 == 0)
  {
    printf("%d is not a leap year.", year);
  }
  else if (year % 4 == 0)
  {
    printf("%d is a leap year.", year);
  }
  else
  {
    printf("%d is not a leap year.", year);
  }

  return 0;
}
```

4) Program to check odd or even number.If number is even then divide it by 2 and odd then divide by 3 and add 1 and print answer.

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

```
int main() {
  int n;
  printf("Enter a number: ");
  scanf("%d", &n);
  if (n % 2 == 0)
  {
    n=n/2;
  }
  else
  {
     n=n/3+1;
  }
printf("The result is %d\n",n);
  return 0;
}
```

5) Program to calculate Root of quadratic equation.

```
#include <stdio.h>
#include <math.h>
int main ()
{
   int a,b,c,d,root1,root2;
   printf("Enter first value\n");
   scanf("%d",&a);
   printf("Enter second value\n");
   scanf("%d",&b);
   printf("Enter third value\n");
   scanf("%d",&c);
   d=(b*b-4*a*c);
   if(d<0)
   {
      printf("ERROR\n");
```

```
    }
    else
    {
        root1 = (-b + sqrt(d)) / (2 * a);
        root2 = (-b - sqrt(d)) / (2 * a);
    }
    printf("The root is %d\t %d\t",root1,root2);
    return 0;
}
```

6) Program to calculate Area of triangle.(If any one side is greater or equal to sum of two sides then print “Invalid data”.

```
#include <stdio.h>
#include <math.h>
int main()
{
    int a,b,c,area,s;
    printf("Enter the first side\n");
    scanf("%d",&a);
     printf("Enter the second side\n");
    scanf("%d",&b);
     printf("Enter the third side\n");
    scanf("%d",&c);
    if(a>=b+c)
    {
        printf("Invalid data\n");
    }
    else if(b>=a+c)
    {
        printf("Invalid data\n");
    }
```

```
else if(c>=b+a)
   {
      printf("Invalid data\n");
   }
else
{
   s=(a+b+c)/2;
   area=sqrt((s-a)*(s-b)*(s-c));
   printf("The area of triangle is %d\n",area);
}
return 0;
}
```

7) Program to check a Largest among 3 numbers.

```
#include <stdio.h>
int main()
{
   int a,b,c;
   printf("Enter the first number\n");
   scanf("%d",&a);
    printf("Enter the second number\n");
   scanf("%d",&b);
    printf("Enter the third number\n");
   scanf("%d",&c);
   if(a>b && a>c)
   {
      printf("%d is largest\n",a);
   }
   else if(b>a && b>c)
   {
      printf("%d is largest\n",b);
   }
else
```

```
{
   printf("%d is largest\n",c);
}
return 0;
}
```

8) Program to take temperature in Fahrenheit and print the following.
   a)temperature>=80 print “Hot Day”
   b)temperature>=60 print “Nice Day”
   c)temperature is less than 60 then print “Cold Day”

```
#include <stdio.h>
int main()
{
   int temp;
   printf("Enter the temperature in fahrenheit\n");
   scanf("%d",&temp);
   if(temp>=80)
   {
      printf("Hot Day\n");
   }
   else if(temp>=60)
   {
      printf("Nice Day\n");
   }
else
{
   printf("Cold Day\n");
}
return 0;
}
```

9) An electricity board charges at the following rates.

For first 20 units…..Rs.80

For next 80 units…..Rs.7.5 per unit

For next 100 units…..Rs.8.5 per unit

For beyond 200 units…..Rs.9.5 per unit

Program to calculate the amount.

```
#include <stdio.h>
int main()
{
   int charge,totalcharge, unit,METERCHARGE=50;
   printf("Enter the unit:\n");
   scanf("%d",&unit);
   if(unit<=100)
   {
      charge=unit*40;
   }
   else if(unit<=300)
   {
      charge=100*40+(unit-100)*50;
   }
else
{
   charge=100*40+200*50+(unit-300)*60;
}
totalcharge=charge+METERCHARGE;
printf("The total charge is %d\n",totalcharge);
return 0;
}
```

10) Program to calculate area of room and check the following conditions.

a) Area<=150 print “Small Room”
b) Area<=500 print “Big Room”
c) Area<=2500 print “Hall”
d) Area is greater than 2500 then print “Auditorium”

```
#include <stdio.h>
int main()
{
   int area,l,b;
   printf("Enter the length of room:\n");
   scanf("%d",&l);
   printf("Enter the breadth of room:\n");
   scanf("%d",&b);
   area=l*b;
   if(area<=150)
   {
    printf("Small room\n");
   }
   else if(area<=500)
   {
    printf("Big room\n");
   }
   else if(area<=2500)
   {
    printf("Hall\n");
   }
   else
   {
    printf("Auditorium\n");
   }
```

```
    printf("Area is %d",area);
return 0;
}
```