Loop Questions with Answers

Q1. Write a C program to print all natural numbers from 1 to n. – using while loop

Answer:-

```
#include <stdio.h>
int main()
{
int i, end;
printf("Print all natural numbers from 1 to : ");
scanf("%d", &end);
i=1;
while(i<=end)
{
printf("%d\n", i);
i++;
}
return 0;
}
```

Q2. Write a C program to print all natural numbers in reverse (from n to 1). – using while loop

Answer

```
#include <stdio.h>
int main()
{
int n;
/*  Input a number from user   */
printf("Enter value of n: ");
scanf("%d", &n);
while(n>=1)
{
printf("%d\n", n);
n--;
}
return 0;
}
```

Q3. Write a C program to print all alphabets from a to z. – using while Loop

Answer

```
#include <stdio.h>
int main()
{
char ch = 'a';
printf("Alphabets from a - z are: \n");
```

```
while(ch<='z')
{
printf("%c\n", ch);
ch++;
}
return 0;
}
```

Q4. Write a C program to print all even numbers between 1 to 100. – using while loop

Answer

```
#include <stdio.h>
int main()
{
int i, n;
// Input upper limit of even number from user
printf("Print all even numbers till: ");
scanf("%d", &n);
printf("All even numbers from 1 to %d are: \n", n);
/* Starts loop counter from 1, increments by 1 till i<=n */
i=1;
while(i<=n)
{
/* Check even condition before printing */
if(i%2==0)
{
   printf("%d\n", i);
}
i++;
}
return 0;
}
```

Q5. Write a C program to print all odd number between 1 to 100.

Answer

```
#include<stdio.h>
int main(){
for(int i=1;i<=100;i++)
{
// if number module i is equal to one, then number is odd
if(i%2==1)
{
   printf("%d\n", i);
}
}
return 0;
}
```

Q6. Write a C program to find sum of all natural numbers between 1 to n.

Answer

```
#include <stdio.h>
int main()
{
int i, n, sum=0;
/* Input upper limit from user */
printf("Enter upper limit: ");
scanf("%d", &n);
/* Find sum of all numbers */
for(i=1; i<=n; i++)
{
sum += i;
}
printf("Sum of first %d natural numbers = %d", n, sum);
return 0;
}
```

Q7. Write a C program to find sum of all even numbers between 1 to n.

Answer

```
#include <stdio.h>
int main()
{
int i, n, sum=0;
/* Input upper limit from user */
printf("Enter upper limit: ");
scanf("%d", &n);
for(i=2; i<=n; i+=2)
{  /* Add current even number to sum */
sum += i;
}
printf("Sum of all even number between 1 to %d = %d", n, sum);
return 0;
}
```

Q8. Write a C program to find sum of all odd numbers between 1 to n.

Answer

```
#include <stdio.h>
int main()
{
int i, n, sum=0;
/* Input range to find sum of odd numbers */
printf("Enter upper limit: ");
scanf("%d", &n);
```

```
/* Find the sum of all odd number */
for(i=1; i<=n; i+=2)
{
sum += i;
}
printf("Sum of odd numbers = %d", sum);
return 0;
}
```

Q 9. Write a C program to print multiplication table of any number.

Answer

```
#include <stdio.h>
int main()
{
int i, num;
/* Input a number to print table */
printf("Enter number to print table: ");
scanf("%d", &num);
for(i=1; i<=10; i++)
{
printf("%d * %d = %d\n", num, i, (num*i));
}
return 0;
}
```

Q10. Write a C program to count number of digits in a number.

Answer

```
#include <stdio.h>
int main() {
long long n;
int count = 0;
printf("Enter an integer: ");
scanf("%lld", &n);
// iterate until n becomes 0
// remove last digit from n in each iteration
// increase count by 1 in each iteration
while (n != 0) {
n /= 10;     // n = n/10
++count;
}
printf("Number of digits: %d", count);
}
```

Q11. Write a C program to find first and last digit of a number.

```
#include <stdio.h>
int main()
{
int n, firstDigit,lastdigit;
/* Input number from user */
printf("Enter any number: ");
scanf("%d", &n);
lastDigit=n%10;
/* Get the first digit */
while(n>=10)
{
n=n/10;
}
firstDigit = n ;
printf("First Digit = %d and Last digit = %d",firstDigit, lastDigit);
return 0;
}
```

Q12. Write a C program to find sum of first and last digit of a number.

Answer

```
#include <stdio.h>
int main()
{
int n, firstDigit,lastdigit,sum=0;
/* Input number from user */
printf("Enter any number: ");
scanf("%d", &n);
lastDigit=n%10;
/* Get the first digit */
while(n>=10)
{
n=n/10;
}
firstDigit = n ;
sum=firstDigit + lastDigit;
printf("Sum = %d",sum);
return 0;
}
```

Q13. Write a C program to calculate sum of digits of a number.

Answer

```
#include <stdio.h>
int main()
{
int num, sum=0;
```

```
/* Input a number from user */
printf("Enter any number to find sum of its digit: ");
scanf("%d", &num);
/* Repeat till num becomes 0 */
while(num!=0)
{
/* Find last digit of num and add to sum */
sum += num % 10;
/* Remove last digit from num */
num = num / 10;
}
printf("Sum of digits = %d", sum);
return 0;
}
```

Q14. Write a C program to calculate product of digits of a number.

Answer

```
int main(void)
{
int num, rem, prod = 1;
printf("Enter a number: ");
scanf("%d", &num);
while(num != 0)
{
rem = num % 10; // get the right-most digit
prod *= rem; // calculate product of digits
num /=  10;  // remove the right-most digit
}
printf("%d", prod);
return 0; // return 0 to operating system
}
```

Q15. Write a C program to enter a number and print its reverse.

Answer

```
#include <stdio.h>
int main()
{
int num, reverse = 0;
/* Input a number from user */
printf("Enter any number to find reverse: ");
scanf("%d", &num);
/* Repeat the till 'num' becomes 0 */
while(num != 0)
{
/*  Increase place value of reverse and add last digit to reverse */
reverse = (reverse * 10) + (num % 10);
```

```
/* Remove last digit from 'num' */
num /= 10;
}
printf("Reverse = %d", reverse);
return 0;
}
```

Q16. Write a C program to check whether a number is palindrome or not.

Answer

```
#include <stdio.h>
int main()
{
int n, num, rev = 0;
/* Input a number from user */
printf("Enter any number to check palindrome: ");
scanf("%d", &n);
/* Copy original value to 'num' to 'n'*/
num = n;
/* Find reverse of n and store in rev */
while(n != 0)
{
rev = (rev * 10) + (n % 10);
n  /= 10;
}
/* Check if reverse is equal to 'num' or not */
if(rev == num)
{
printf("%d is palindrome.", num);
}
else
{
printf("%d is not palindrome.", num);
}
return 0;
}
```

Q17. Write a C program to enter a number and print it in words.(Switch Case)

Answer

```
#include <stdio.h>
int main()
{
int n, num = 0;
/* Input number from user */
printf("Enter any number to print in words: ");
scanf("%d", &n);
/* Store reverse of n in num */
```

```
while(n != 0)
{
num = (num * 10) + (n % 10);
n /= 10;
}
/* Extract last digit of number and print corresponding digit in words till num becomes
0  */
while(num != 0)
{
switch(num % 10)
{
   case 0:
      printf("Zero ");
      break;
   case 1:
      printf("One ");
      break;
   case 2:
      printf("Two ");
      break;
   case 3:
      printf("Three ");
      break;
   case 4:
      printf("Four ");
      break;
   case 5:
      printf("Five ");
      break;
   case 6:
      printf("Six ");
      break;
   case 7:
      printf("Seven ");
      break;
   case 8:
      printf("Eight ");
      break;
   case 9:
      printf("Nine ");
      break;
}
num = num / 10;
}
return 0;}
```

Q18. Write a C program to print all ASCII character with their values.

Answer

```
#include <stdio.h>
int main()
{
int i;
/* Print ASCII values from 0 to 255 */
for(i=0; i<=255; i++)
{
printf("ASCII value of character %c = %d\n", i, i);
}
return 0;
}
```

Q19. Write a C program to find power of a number using for loop.

Answer

```
#include <stdio.h>
int main()
{
int base, exponent;
long long power = 1;
int i;
/* Input base and exponent from user */
printf("Enter base: ");
scanf("%d", &base);
printf("Enter exponent: ");
scanf("%d", &exponent);
/* Multiply base, exponent times*/
for(i=1; i<=exponent; i++)
{
power = power * base;
}
printf("%d ^ %d = %lld", base, exponent, power);
return 0;
}
```

Q20. Write a C program to find all factors of a number.

Answer

```
#include <stdio.h>
int main()
{
int i, num;
/* Input number from user */
printf("Enter any number to find its factor: ");
scanf("%d", &num);
printf("All factors of %d are: \n", num);
```

```
/* Iterate from 1 to num */
for(i=1; i<=num; i++)
{
/* If num is exactly divisible by I Then i is a factor of num */
if(num % i == 0)
{
  printf("%d, ",i);
}
}
return 0;
}
```

Q21. Write a C program to calculate factorial of a number.

Answer

```
#include <stdio.h>
int main()
{
int c, n, f = 1;
printf("Enter a number to calculate its factorial\n");
scanf("%d", &n);
for (c = 1; c <= n; c++)
f = f * c;
printf("Factorial of %d = %d\n", n, f);
return 0;
}
```

Q22. Write a C program to find HCF (GCD) of two numbers.

Answer

```
#include <stdio.h>
int main()
{
int i, num1, num2, min, hcf=1;
/* Input two numbers from user */
printf("Enter any two numbers to find HCF: ");
scanf("%d%d", &num1, &num2);
/* Find minimum between two numbers */
min = (num1<num2) ? num1 : num2;
for(i=1; i<=min; i++)
{ /* If i is factor of both number */
if(num1%i==0 && num2%i==0)
{
  hcf = i;
}
}
printf("HCF of %d and %d = %d\n", num1, num2, hcf);
return 0;
}
```

Q23. Write a C program to find LCM of two numbers.

Answer

```
#include <stdio.h>
int main()
{
int i, num1, num2, max, lcm=1;
/* Input two numbers from user */
printf("Enter any two numbers to find LCM: ");
scanf("%d%d", &num1, &num2);
/* Find maximum between num1 and num2 */
max = (num1 > num2) ? num1 : num2;
/* First multiple to be checked */
i = max;
/* Run loop indefinitely till LCM is found */
while(1)
{
if(i%num1==0 && i%num2==0)
{
/* If 'i' divides both 'num1' and 'num2' then 'i' is the LCM. */
lcm = i;
/* Terminate the loop after LCM is found */
  break;
}
/* If LCM is not found then generate next multiple of max between both numbers */
i += max;
}
printf("LCM of %d and %d = %d", num1, num2, lcm);
return 0;
}
```

Q24. Write a C program to check whether a number is Prime number or not.

Answer

```
#include <stdio.h>
int main()
{
int i, num, isPrime;
/* isPrime is used as flag variable. If isPrime = 0, then number is composite else if
isPrime = 1, then number is prime. Initially I have assumed the number as prime.*/
isPrime = 1;
/* Input a number from user */
printf("Enter any number to check prime: ");
scanf("%d", &num);
```

```
for(i=2; i<=num/2; i++)
{
/* Check divisibility of num */
if(num%i==0)
{
   /* Set isPrime to 0 indicating it as composite number */
   isPrime = 0;

   /* Terminate from loop */
   break;
}
}
/*  If isPrime contains 1 then it is prime   */
if(isPrime == 1 && num > 1)
{
printf("%d is prime number", num);
}
else
{
printf("%d is composite number", num);
}
return 0;
}
```

Q25. Write a C program to print all Prime numbers between 1 to n.

Answer

```
#include <stdio.h>
int main()
{
int i, j, end, isPrime; // isPrime is used as flag variable
/* Input upper limit to print prime */
printf("Find prime numbers between 1 to : ");
scanf("%d", &end);
printf("All prime numbers between 1 to %d are:\n", end);
/* Find all Prime numbers between 1 to end */
for(i=2; i<=end; i++)
{
/* Assume that the current number is Prime */
isPrime = 1;
/* Check if the current number i is prime or not */
for(j=2; j<=i/2; j++)
{
/* If i is divisible by any number other than 1 and self then it is not prime number
*/
if(i%j==0)
```

```
        {
            isPrime = 0;
            break;
        }
    }

    /* If the number is prime then print */
    if(isPrime==1)
    {
        printf("%d, ", i);
    }
    }
    return 0;
    }
```

Q26. Write a C program to find sum of all prime numbers between 1 to n.

Answer

```
    #include <stdio.h>
    int main()
    {
    int i, j, end, isPrime, sum=0;
    /* Input upper limit from user */
    printf("Find sum of all prime between 1 to : ");
    scanf("%d", &end);
    /* Find all prime numbers between 1 to end */
    for(i=2; i<=end; i++)
    {
    /* Check if the current number i is Prime or not */
    isPrime = 1;
    for(j=2; j<=i/2 ;j++)
    {
    if(i%j==0)
    {
    /* 'i' is not prime */
    isPrime = 0;
    break;
    }
    }
    /* If 'i' is Prime then add to sum */
    if(isPrime==1)
    {
        sum += i;
    }
    }
printf("Sum of all prime numbers between 1 to %d = %d", end, sum);
return 0; }
```

Q27. Write a C program to find all prime factors of a number.

Answer

```
#include <stdio.h>
int main()
{
int i, j, num, isPrime;
/* Input a number from user */
printf("Enter any number to print Prime factors: ");
scanf("%d", &num);
printf("All Prime Factors of %d are: \n", num);
/* Find all Prime factors */
for(i=2; i<=num; i++)
{
/* Check 'i' for factor of num */
if(num%i==0)
{
/* Check 'i' for Prime */
  isPrime = 1;
  for(j=2; j<=i/2; j++)
  {
    if(i%j==0)
    {
      isPrime = 0;
      break;
    }
  }
  /* If 'i' is Prime number and factor of num */
  if(isPrime==1)
  {
    printf("%d, ", i);
  }
}
}
return 0;
}
```

Q28. Write a C program to check whether a number is Armstrong number or not.

Answer

```
#include <stdio.h>
#include <math.h>
int main()
{
int originalNum, num, lastDigit, digits, sum;
/* Input number from user */
printf("Enter any number to check Armstrong number: ");
scanf("%d", &num);
```

```
sum = 0;
/* Copy the value of num for processing */
originalNum = num;
/* Find total digits in num */
digits = (int) log10(num) + 1;
/* Calculate sum of power of digits */
while(num > 0)
{
/* Extract the last digit */
lastDigit = num % 10;
/* Compute sum of power of last digit */
sum = sum + round(pow(lastDigit, digits));
/* Remove the last digit */
num = num / 10;
}
/* Check for Armstrong number */
if(originalNum == sum)
{
printf("%d is ARMSTRONG NUMBER", originalNum);
}
else
{
printf("%d is NOT ARMSTRONG NUMBER", originalNum);
}
return 0;
}
```

Q29. Write a C program to print all Armstrong numbers between 1 to n.

Answer

```
#include <stdio.h>
#include <math.h>
int main()
{
int num, lastDigit, digits, sum, i, end;
/* Input upper limit from user */
printf("Enter upper limit: ");
scanf("%d", &end);
printf("Armstrong number between 1 to %d are: \n", end);
for(i=1; i<=end; i++)
{
sum = 0;
/* Copy the value of num for processing */
num = i;
/* Find total digits in num */
digits = (int) log10(num) + 1;
```

```
/* Calculate sum of power of digits */
while(num > 0)
{
   /* Extract last digit */
   lastDigit = num % 10;
   // Find sum of power of digits
   // Use ceil() function to overcome any rounding errors by pow()
   sum = sum + ceil(pow(lastDigit, digits));
   /* Remove the last digit */
   num = num / 10;
}
/* Check for Armstrong number */
if(i == sum)
{
   printf("%d, ", i);
}
}
return 0;
}
```

Q30. Write a C program to check whether a number is Perfect number or not.

Answer

```
#include <stdio.h>
int main()
{
int i, num, sum = 0;
/* Input a number from user */
printf("Enter any number to check perfect number: ");
scanf("%d", &num);
/* Calculate sum of all proper divisors */
for(i = 1; i <= num / 2; i++)
{
/* If i is a divisor of num */
if(num%i == 0)
{
   sum += i;
}
}
/* Check whether the sum of proper divisors is equal to num */
if(sum == num)
{
printf("%d is PERFECT NUMBER", num);
}
```

```
else
{
printf("%d is NOT PERFECT NUMBER", num);
}
return 0;
}
```

Q31. Write a C program to print all Perfect numbers between 1 to n.

Answer

```
#include <stdio.h>
int main()
{
int i, j, end, sum;
/* Input upper limit to print perfect number */
printf("Enter upper limit: ");
scanf("%d", &end);
printf("All Perfect numbers between 1 to %d:\n", end);
/* Iterate from 1 to end */
for(i=1; i<=end; i++)
{
sum = 0;
/* Check whether the current number i is Perfect number or not */
for(j=1; j<i; j++)
{
if(i % j == 0)
{
      sum += j;
}
}
/* If the current number i is Perfect number */
if(sum == i)
{
   printf("%d, ", i);
}
}
return 0;
}
```

Q32. Write a C program to check whether a number is Strong number or not (Also known as Robinson number/ Krishnamurthy Number / Peterson number.)

Answer

```
#include <stdio.h>
int main()
{
int i, originalNum, num, lastDigit, sum;
long fact;
```

```
/* Input a number from user */
printf("Enter any number to check Strong number: ");
scanf("%d", &num);
/* Copy the value of num to a temporary variable */
originalNum = num;
sum = 0;
/* Find sum of factorial of digits */
while(num > 0)
{
/* Get last digit of num */
lastDigit = num % 10;
/* Find factorial of last digit */
fact = 1;
for(i=1; i<=lastDigit; i++)
{
   fact = fact * i;
}
/* Add factorial to sum */
sum = sum + fact;
num = num / 10;
}
/* Check Strong number condition */
if(sum == originalNum)
{
printf("%d is STRONG NUMBER", originalNum);
}
else
{
printf("%d is NOT STRONG NUMBER", originalNum);
}
return 0;
}
```

Q33. Write a C program to print all Strong numbers between 1 to n.

Answer

```
#include <stdio.h>
int main()
{
int i, j, cur, lastDigit, end;
long long fact, sum;
/* Input upper limit from user */
printf("Enter upper limit: ");
scanf("%d", &end);
printf("All Strong numbers between 1 to %d are:\n", end);
```

```
/* Iterate from 1 to end */
for(i=1; i<=end; i++)
{
/* Number to check for strong number */
cur = i;
sum = 0;
/* Find the sum of factorial of digits */
while(cur > 0)
{
   fact = 1ll;
   lastDigit = cur % 10;

   /* Find factorial of last digit of current num. */
   for( j=1; j<=lastDigit; j++)
   {
      fact = fact * j;
}
   sum += fact;
   cur /= 10;
}
/* Print 'i' if it is strong number */
if(sum == i)
{
   printf("%d, ", i);
}
}
return 0;
}
```

Q34. Write a C program to print Fibonacci series up to n terms.

Answer

```
#include <stdio.h>
int main()
{
int a, b, c, i, terms;
/* Input number from user */
printf("Enter number of terms: ");
scanf("%d", &terms);
/* Fibonacci magic initialization */
a = 0;
b = 1;
c = 0;
printf("Fibonacci terms: \n");
```

```
/* Iterate through n terms */
for(i=1; i<=terms; i++)
{
printf("%d, ", c);
a = b;     // Copy n-1 to n-2
b = c;     // Copy current to n-1
c = a + b; // New term
}
return 0;
}
```

Q35. Write a C program to convert Binary to Decimal number system.

Answer

```
#include <stdio.h>
#include <math.h>
#define BASE 2
int main()
{
long long binary, decimal=0, tempBinary;
int N=0;
printf("Enter any binary number: ");
scanf("%lld", &binary);
tempBinary = binary;
while(tempBinary!=0)
{
/* If current binary digit is 1 */
if(tempBinary % 10 == 1)
{
   decimal += pow(BASE, N);
}

N++;
tempBinary /= 10;
}
printf("Binary number = %lld\n", binary);
printf("Decimal number= %lld", decimal);
return 0;
}
```

Q36. Write a C program to convert Decimal to Binary number system.

Answer

```
#include <stdio.h>
int main()
{
long long decimal, tempDecimal, binary;
int rem, place = 1;
```

```
binary = 0;
/* Input decimal number from user */
printf("Enter any decimal number: ");
scanf("%lld", &decimal);
tempDecimal = decimal;
/* Decimal to binary conversion */
while(tempDecimal > 0)
{
rem = tempDecimal % 2;
binary = (rem * place) + binary;
tempDecimal /= 2;
place *= 10;
}
printf("Decimal number = %lld\n", decimal);
printf("Binary number = %lld", binary);
return 0;
}
```

Patterns using Nested Loops

Ques:-

```
*           1           1           1                 2           1           5
* *         2 2         1 2         2  3              3 4         0 1         5 4
* * *       3 3 3       1 2 3       4  5  6           4 5 6       1 0 1       5 4 3
* * * *     4 4 4 4     1 2 3 4     7  8  9  10       5 6 7 8     0 1 0 1     5 4 3 2
* * * * *   5 5 5 5 5   1 2 3 4 5   11 12 13 14 15   6 7 8 9 10   1 0 1 0 1   5 4 3 2 1
  (a)         (b)         (c)           (d)             (e)         (f)         (g)
```

```
5
4 4
3 3 3
2 2 2 2
1 1 1 1 1
  (h)
```

The program for pyramid (a) is –

```
void main()
{
int i,j,n;
printf("Enter n:");
scanf("%d",&n);
```

```
for(i=1;i<=n;i++)
      {
            for(j=1;j<=I;j++)
              printf("* ");
            printf("\n");
      }
}
```

Logic (b)
In the above program if we print the value of I,, then we will get the pyramid b.

Logic (c)
In the above program if we print the value of I,, then we will get the pyramid c.

Logic (d)
We will take a variable p=1 and write printf statement as –
printf("%3d",p++);

Logic (e)
We will print the value of i+j

Logic (f)
We will print 1 if (i+j) is even and print 0 if i+j is odd.

Logic (g)
We will print (n+1-j)

Logic (h)
We will print (n+1-i)

* * * * *	5 5 5 5 5	1 2 3 4 5	5 4 3 2 1
* * * *	4 4 4 4	1 2 3 4	5 4 3 2
* * *	3 3 3	1 2 3	5 4 3
* *	2 2	1 2	5 4
*	1	1	5
(a)	(b)	(c)	(d)

Code for pyramid (a) is

```
for (i=n;i>=1;i--)
      {
            for(j=1;j<=I;j++)
              printf("* ");
              printf("\n");
      }
```

For pyramid (b),(c),(d) we will print the values of I,j,(n+1-j) and (n+1-i) respectively.

Switch Questions

Q1. C Program To Convert Celsius To Fahrenheit And Vice Versa Using Switch Case

```
#include<stdio.h>
int main()
{
 float a,b,centigrade, fahrenheit;
 int x;
 printf("1. For Fahrenheit To Celsius\n");
 printf("2. For Celsius To Fahrenheit\n");
 printf("\n\nEnter Your Choice\n");
 scanf("%d",&x);
 switch(x)
 {
 case 1:
  printf("\nEnter The Value of Fahrenheit Temperature: ");
  scanf("%f",&a);
  centigrade=5*(a-32)/9;
  printf("\n\nCelsius Temperature: %f ",centigrade);
  break;
 case 2:
  printf("\nEnter The Value of Celsius Temperature: ");
  scanf("%f",&b);
  fahrenheit=((9*b)/5)+32;
  printf("\n\nFahrenheit Temperature: %f ",fahrenheit);
  break;
 default:
 printf("\n\nWrong Choice.....Try Again!!!\n");
 }
 getch();
 return(0);
}
```

Q2. C Program To Print Day of Week Name Using Switch Case

```
#include<stdio.h>
int main()
{
 int choice;
 printf("Monday Willbe First Days and So On\n\n");
 printf("Enter Any Number Between (1 to 7):");
 scanf("%d",&choice);
 printf("\n");
  switch(choice)
 {
  case  1:
   printf("Today is Monday");
   break;
  case  2:
   printf("Today is Tuesday");
   break;
  case  3:
   printf("Today is Wednesday");
   break;
  case  4:
   printf("Today is Thursday");
   break;
  case  5:
   printf("Today is Friday");
   break;
  case  6:
   printf("Today is Saturday");
   break;
  case  7:
   printf("Today is Sunday");
   break;
  default:
  printf("Don't Be Smart....Wrong Choice Try Again!!!");
 }
 getch();
}
```

Q3. C Program For Calculator Using Switch Case

```
#include<stdio.h>
#include<conio.h>
main()
{
char choice;
int num1, num2, result = 0;
while(1)
{
printf("\nEnter First Value:");
scanf("%d",&num1);
printf("\nEnter Operator(+, -, *, /, %):");
//choice=getch();
scanf(" %c",&choice);
printf("\nEnter Second Value:");
scanf("%d",&num2);
switch(choice)
{
case '+':
  result = num1 + num2;
  printf("\nSum is = %d",result);
 break;

case '-':
  result = num1 - num2;
  printf("\nDifference is = %d",result);
  printf("\n\nPress Enter Again for New Input\n");
 break;

case '*':
  result = num1 * num2;
  printf("\nProduct is = %d",result);
  printf("\n\nPress Enter Again for New Input\n");
 break;

case '/':
  result = num1 / num2;
  printf("\nQuotient is = %d",result);
  printf("\n\nPress Enter Again for New Input\n");
 break;

case '%':
  result = num1 % num2;
  printf("\nReminder is = %d",result);
```

```
printf("\n\nPress Enter Again for New Input\n");
 break;

default:
  printf("\nEnter Valid Operator!!!\n");
  printf("\n\nPress Enter Again for New Input\n");
}
getch();
}
}
```

Q4. C Program to Find Grade of a Student Using Switch Case

```
#include<stdio.h>
int main()
{
  int marks;
  /*C Program to Find Grade of a Student Using Switch Case*/

  printf("\n-----------------------------------");
  printf("\nEnter The Marks Between 0 To 100:");

  printf("\nEnter The Mark: ");
  scanf("%d", &marks);

  if(marks>100)
  {
   /* Marks greater than 100 */
   printf("\nDon't Be Smart Enter your Marks Between Limit\n");
  }
  else
  {
  switch(marks/10)
  {
     case 10 :
     case 9 :
        /* Marks between 90-100 */
        printf("\n Your Grade is: A");
        break;
     case 8 :
         /* Marks between 80-89 */
        printf("\n Your Grade is: B" );
```

```
        break;
    case 7 :
        /* Marks between 70-79 */
        printf("\n Your Grade is: C" );
        break;
    case 6 :
        /* Marks between 60-69 */
        printf("\n Your Grade is: D" );
        break;
    case 5 :
         /* Marks between 50-59 */
        printf("\n Your Grade is: E" );
        break;
    case 4 :
        /* Marks between 40-59 */
        printf("\n Your Grade is: E--");
        break;
    default :
        /* Marks less than 40 */
        printf("\n You Grade is: F or Fail\n");
  }
 }

  getch();
  return 0;
}
```

Q5. C Program For Find Radius, Circumference and Volume of Cylinder Using Switch Case

```
#include<stdio.h>
#include<conio.h>
int main()
{
float radius=0.0,height=0.0;
char quit;
int choice;
const float pi=3.1415658;
do
{
printf("\n=======================================");
printf("\nWhat Do You Want To Calculate?");
printf("\n1. For Area of Circle");
printf("\n2. For Circumference of Circle");
printf("\n3. For Volume of Cylinder");
printf("\n0. For For Quit");
```

```
printf("\n=======================================\n");
printf("\nEnter Your Choice Here:");
scanf("%d",&choice);
switch (choice)
{
case 1:
 printf("\nEnter Radius of Circle:");
 scanf("%f",&radius);
 printf("\n=======================================");
    printf("\nArea of Circle = %.5f",radius*radius*pi);
    printf("\n=======================================");
  break;
case 2:
 printf("\nEnter Radius of Circle:");
 scanf("%f",&radius);
 printf("=======================================");
    printf("\nCircumference of Circle = %.5f",2*radius*pi);
 printf("\n=======================================");
    break;
case 3:
 printf("\nEnter Radius of Cylinder:");
 scanf("%f",&radius);
    printf("\nEnter Hight of Cylinder:");
    scanf("%f",&height);
    printf("\n=======================================");
    printf("\nVolume of cylinder = %.5f",radius*radius*pi*height);
    printf("\n=======================================");
    break;
case 0:
    quit='y';
    break;
default:
 printf("\n=======================================");
    printf("\nWrong Choice....Try Again!!!\n");
    printf("=======================================");
  break;
}
}while(quit != 'y');

return 0;
}
```