Question 1: Write A Program to Display **N** Natural Numbers.

Answer:

- **Code:**

```
[■]                    Q1.C
#include<stdio.h>
#include<conio.h>
 void main()
{
  int n,i;
  clrscr();
  printf("Enter Number : ");
  scanf("%d",&n);
  printf("\nFirst %d Natural Numbers Are.. ",n);
  for(i=1;i<=n;i++)
   {
     printf("\n%d",i);
   }
  getch();
 }
```

- **Output:**

```
Enter Number : 10

First 10 Natural Numbers Are..
1
2
3
4
5
6
7
8
9
10_
```

Question 2: Write a Program To Display Arithmetic Operations Using Switch Case.

Answer:

- **Code:**

```
Q2.C
#include<stdio.h>
#include<conio.h>
void main()
{
 int n;
 int a,b;
 clrscr();
 printf("Select Arithmetic Operator:\n1 - Addition\n2 - Subtraction");
 printf("\n3 - Division\n4 - Multiplication\n5 - Modulas");
 printf("\nEnter Value : ");
 scanf("%d",&n);
 printf("\nEnter Value Of A = ");
 scanf("%d",&a);
 printf("\nEnter Value Of B = ");
 scanf("%d",&b);
 switch(n)
 {
  case 1:
   printf("\nAddition = %d",a+b);
   break;
  case 2:
```

```
  case 2:
   printf("\nSubtraction = %d",a-b);
   break;
  case 3:
   printf("\nDivision = %d",a/b);
   break;
  case 4:
   printf("\nMultiplication = %d",a*b);
   break;
  case 5:
   printf("\nModulas = %d",a%b);
   break;
 }
 getch();
}
```

- **Output:**

```
Select Arithmetic Operator:
1 - Addition
2 - Subtraction
3 - Division
4 - Multiplication
5 - Modulas
Enter Value : 4

Enter Value Of A = 4

Enter Value Of B = 5

Multiplication = 20
```

Question 3: Write A Program To Show Multiplication Table Of A Given Number.

Answer:

- **Code:**

```
Q3.C
#include<stdio.h>
#include<conio.h>
void main()
{
 int n,i,r;
 clrscr();
 printf("Enter Number For Multiplication Table : ");
 scanf("%d",&n);
 printf("\n\tMultipication Table");
 for(i=1;i<=10;i++)
 {
   r=i*n;
   printf("\n%d x %d = %d",n,i,r);
 }
 getch();
}
```

- **Output:**

```
Enter Number For Multiplication Table : 9

        Multipication Table
9 x 1 = 9
9 x 2 = 18
9 x 3 = 27
9 x 4 = 36
9 x 5 = 45
9 x 6 = 54
9 x 7 = 63
9 x 8 = 72
9 x 9 = 81
9 x 10 = 90_
```

Question 4: Write A Program To Show Swap Of Two Numbers Without Using Third Variable.

Answer:

- **Code:**

```
Q4.C
#include<stdio.h>
#include<conio.h>
void main()
{
 int a,b;
 clrscr();
 printf("Enter Value Of A : ");
 scanf("%d",&a);
 printf("\nEnter Value Of B : ");
 scanf("%d",&b);
 printf("\nBefore Swapping Value Of A = %d And B = %d",a,b);
 a=a+b; b=a-b; a=a-b;
 printf("\nAfter Swapping Value Of A = %d And B = %d",a,b);
 getch();
}
```

- **Output:**

```
Enter Value Of A : 12

Enter Value Of B : 34

Before Swapping Value Of A = 12 And B = 34
After Swapping Value Of A = 34 And B = 12_
```

Question 5: Write A Program To Print Following Pattern: 1 12 123 1234…

Answer:

- **Code :**

```
Q5.C
#include<stdio.h>
#include<conio.h>
void main()
{
 int i,j,n;
 clrscr();
 printf("Enter Number = ");
 scanf("%d",&n);
 for(i=1;i<=n;i++)
 {
  for(j=1;j<=i;j++)
  {
   printf("%d",j);
  }
  printf("\n");
 }
 getch();
}
```

- **Output :**

```
Enter Number = 9
1
12
123
1234
12345
123456
1234567
12345678
123456789
```

Question 6 : Write a program to print following string pattern; A AB ABA ABAB…

Answer :

- **Code :**

```
Q6.C
#include<stdio.h>
#include<conio.h>
void main()
{
 int i,j,n;
 clrscr();
 printf("Enter Number = ");
 scanf("%d",&n);
 for(i=1;i<=n;i++){
  for(j=1;j<=i;j++){
   if(j%2==1)
   { printf("A"); }
   else
   { printf("B"); }
  }
  printf("\n");
 }
 getch();
}
```

- **Output :**

```
Enter Number = 9
A
AB
ABA
ABAB
ABABA
ABABAB
ABABABA
ABABABAB
ABABABABA
```

Question 7 : Write a program to check whether inputted number is Armstrong number or not.

Answer :

- **Code :**

```c
#include<stdio.h>
#include<conio.h>
void main()
{
 int n,a,b,s=0;
 clrscr();
 printf("Enter Number = ");
 scanf("%d",&n);
 a=n;
 while(n!=0){
  b=n%10;
  s=s+b*b*b;
  n=n/10;
 }
 if(s==a){
 printf("\n%d Is Armstrong Number",a); }
 else {
 printf("\n%d Is Not Armstrong Number",a); }
 getch();
}
```

- **Output :**

```
Enter Number = 153

153 Is Armstrong Number_
```

```
Enter Number = 122

122 Is Not Armstrong Number_
```

Question 8 : Program to print Fibonacci series up to 30.

Answer :

- **Code :**

```
Q8.C
#include<stdio.h>
#include<conio.h>
void main()
{
 int n=30;
 long long int a=0,b=1,c=0,i;
 clrscr();
 for(i=0;i<n;i++)
 {
  printf("%lld,",c);
  a=b;
  b=c;
  c=a+b;
 }
 getch();
}
```

- **Output :**

```
0,1,1,2,3,5,8,13,21,34,55,89,144,233,377,610,987,1597,2584,4181,6765,10946,17711
,28657,46368,75025,121393,196418,317811,514229,
```

Question 9 : Write a program to find maximum number in an array.

Answer :

- **Code :**

Q9.C

```
#include<stdio.h>
#include<conio.h>
void main() {
 int size,i,b;
 int a[100];
 clrscr();
 printf("Enter The Size Of Array : ");
 scanf("%d",&size);
 printf("Enter Numbers : ");
  for(i=0;i<size;i++) {
   scanf("%d",&a[i]); }
   b=a[0];
  for(i=1;i<size;i++) {
  if (b<a[i]) {
  b=a[i]; }
 }
 printf("Largest Number = %d",b);
 getch();
}
```

- **Output :**

```
Enter The Size Of Array : 6
Enter Numbers : 12
45
67
89
112
10
Largest Number = 112_
```

Question 10 : Write a program to check whether inputted string is palindrome or not.

Answer :

- **Code :**

```
[■]                                    Q10.C
#include<stdio.h>
#include<conio.h>
void main() {
 char a[]={"okko"};
 int l = 0,h;
 clrscr();
 h=strlen(a)-1;
 while(h>l) {
  if(a[l++]!=a[h--]) {
   printf("%s Is Not Palindrone",a);
   getch();
   exit(); }
   }
 printf("%s Is Palindrone",a);
 getch();
}
```

- **Output :**

```
okko Is Palindrone_
```

```
abcd Is Not Palindrone
```

Question 11 : Write a program to sort given array in ascending order.

Answer :

- **Code :**

```
Q10.C
#include<stdio.h>
#include<conio.h>
void main() {
 int a[10],n=5;
 int t,i,j;
 clrscr();
 printf("Enter 5 Numbers :");
 for(i=0;i<n;i++) {
  scanf("%d",&a[i]); }
 printf("Unsorted Array : ");
 for(i=0;i<n;i++) {
  printf("%d ",a[i]); }
 for(i=0;i<n;i++) {
  for(j=i+1;j<n;j++) {
   if(a[i]>a[j]) {
    t=a[i];
    a[i]=a[j];
    a[j]=t; }
   }
  }
 printf("\nSorted Array : ");
 1:22
 printf("\nSorted Array : ");
 for(i=0;i<n;i++) {
  printf("%d ",a[i]); }
 getch();
}
 26:18
```

- **Output :**

```
Enter 5 Numbers :13
8
89
96
5
Unsorted Array : 13 8 89 96 5
Sorted Array : 5 8 13 89 96 _
```

Question 12 : Write a program to count number of vowels, consonants, spaces and special characters in a given statement.

Answer :

- **Code :**

```
[■]═══ Q11.C ═══6=[↕]
#include<stdio.h>
#include<conio.h>
void main() {
 char line[150];
 int v=0,c=0,d=0,s=0,sc=0,i;
 clrscr();
 printf("Enter Line  ");
 fgets(line,sizeof(line),stdin);
 for(i=0;line[i]!='\0';i++) {
  line[i]=tolower(line[i]);
  if(line[i]=='a'||line[i]=='e'||line[i]=='i'||line[i]=='o'||line[i]=='u')
  { v++; }
  else if((line[i]>='a'&&line[i]<='z'))
  { c++; }
  else if(line[i]>='0'&&line[i]<='9')
  { d++; }
  else if(line[i]==' ')
  { s++; }
```

```
  { s++; }
  else
  { sc++; }
 }
 printf("Vowels : %d\nConsonants : %d",v,c);
 printf("\nDigits : %d\nSpaces : %d\nSpecial Charcter : %d",d,s,sc);
 getch();
}
```

- **Output :**

```
Enter Line : Hello World! 15
Vowels : 3
Consonants : 7
Digits : 2
Spaces : 2
Special Charcter : 1_
```

Question 13 : Write a program to take string as input and search character, find occurrences of search character.

Answer :

- **Code :**

```
#include <stdio.h>
#include <conio.h>
void main()
{
 char s[100];
 char a;
 int i=0;
 clrscr();
 printf("Enter String: ");
 gets(s);
 printf("Enter Character to search: ");
 a=getchar();
 while(s[i]!='\0') {
  if(s[i] == a) {
   printf("'%c' is found at index %d\n",a, i);  }
  i++;
 }
 getch();
}
```

- **Output :**

```
Enter String: Student
Enter Character to search: t
't' is found at index 1
't' is found at index 6
```

Question 14 : Write a program to create, initialize, assign and access a pointer variable

Answer :

- **Code :**

```c
#include <stdio.h>
#include <conio.h>
void main()
{
int num = 15;
int *ptr;
clrscr();
ptr = &num;
printf("The value of num is %d\n", num);
printf("The value of pionter is %p\n", ptr);
printf("The value pointed to by pointer is %d\n", *ptr);
getch();
}
```

- **Output :**

```
The value of num is 15
The value of pionter is FFF4
The value pointed to by pointer is 15
```

Question 15 : Write a program to create, initialize, assign and access a pointer variable

Answer :

- **Code :**

```
#include <stdio.h>
#include <conio.h>
void main()
{
int x=20;
int *p;
clrscr();
p=&x;
printf("Before Changing Value Of X = %d",x);
*p=15;
printf("\nAfter Changing Value Of X = %d",x);
getch();
}
```

- **Output :**

```
Before Changing Value Of X = 20
After Changing Value Of X = 15
```