C PROGRAMMING Exam Slip Solution

SLIP 01

Q1) Write a ‘C’ program to read an integer and display the message as “Positive Number”, “Negative Number” or “Zero Value” depending on the value of the given number. Use ternary operator.

```
#include <stdio.h>

int main()
{
    int num,res;

    printf("\n Enter Number : ");
    scanf("%d",&num);

     (num > 0) ? (res= 1) : (res=-1);  //Ternary opr

     if(res==1)
          printf("\n Number is POSITIVE ....");
     else if(res==-1)
           printf("\n Number is NEGATIVE  OR ZERO ....");

    return 0;
}
```

Q.2 Write a menu-driven program using Switch case to calculate the following: 1. Area of circle 2. Area of square 3. Exit

```
#include <stdio.h>
int main()
{
    int ch;
    float area,r,side;
     do
    {
        printf("\n 1. Area of Circle ");
        printf("\n 2. Area of Square ");
        printf("\n 3. Exit ");
        printf("\n Enter your choice ");
        scanf("%d",&ch);
        switch(ch)
        {
            case 1 :
                    printf("\n Enter radius : ");
                    scanf("%f",&r);
                    area=3.14 * r * r ;
                    printf("\n Area of Circle : %.2f",area);
                    break;

            case 2 :
                    printf("\n Enter side : ");
                    scanf("%f",&side);
                    area=side * side ;
                    printf("\n Area of Square : %.2f",area);
                    break;
            case 3 : break;

        }
```

```
    }while(ch!=3);
    return 0;
}
```

SLIP 02

Q1) Write a 'C' program to accept the values of two sides of a shape. Check whether it is a square or rectangle. Display its area.

```
#include <stdio.h>

int main()
{
     int side1, side2,area;
    // Example test case

    printf("\n Enter two side of a shape : ");
    scanf("%d%d",&side1,&side2);


    if (side1 == side2)
       {
        printf("Square .\n");

        area = side1  *  side1;
        printf("\n Area of Square  is  %d",area);
       }
    else
    {
        printf(" Rectangle.\n");
        area = side1  *  side2;
        printf("\n Area of Rectangle  is  %d",area);

    }

   return 0;
}
```

Q2) Write a ‘C’ program to read ‘n’ integers in an array. Display alternate elements of that array.

```
#include <stdio.h>

int main()
{

   int array[20],n;
        int i;

        printf("\n Enter the limit of an array :   ");
        scanf("%d",&n);
        printf("Enter the element of an array \n");
        for (i = 0; i < n; i++)
            scanf("%d", &array[i]);

        printf("Alternate elements of a given array \n");
        for (i = 0; i < n; i += 2)
            printf( "%d\n", array[i]) ;
    return 0;
}
```

SLIP 03

Q1.Write a ‘C’ program to accept any alphabet. Change its case and display the changed case

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

int main()
{
    char ch;
    printf("\n Enter any Alphabet : ");
    scanf("%c",&ch);

    if(isupper(ch))
      printf("After Change Case  :  %c",tolower(ch));
    else
       printf("After Change Case  :  %c",toupper(ch));


    return 0;
}
```

Q2) Write a recursive function to find the factorial of a given number

```
#include<stdio.h>
 int fact(int n);
int main()
{
    int n;
    printf("Enter a positive integer: ");
    scanf("%d",&n);
    printf("Factorial of %d = %d", n, fact(n));
    return 0;
}

 int fact(int n)
{
    if (n>=1)
        return n*fact(n-1);
    else
        return 1;
}
```

SLIP 04

Q1) Write a ‘C’ program to accept an integer. Display its square on the first line. Cube on the second line and square root on the third line.

```
#include <stdio.h>

int main()
{

    int num,sq,cb,sq_root;
    printf("\n Emter number : ");
    scanf("%d",&num);

    sq = num * num ;
    cb = num * num * num;
    sq_root = sqrt(num);


    printf("\n -------------  Output --------------\n");

    printf("\n Line  1 :  Square     of Number :  %d",sq);
    printf("\n Line  2 :  cube       of Number :  %d",cb);
    printf("\n Line  3 :  Squareroot of Number :  %d",sq_root);
    return 0;
}
```

Q2) Write a ‘C’ program to accept 10 integers in an array. Display only the even integers from the array.

```
#include <stdio.h>

int main()
{

   int arr[50], i, n;
 printf("Enter n:");
 scanf("%d", &n);

 /* Reading Array */
 printf("Enter numbers:\n");
 for(i=0;i< n;i++)
 {
  printf("arr[%d]=",i);
  scanf("%d",&arr[i]);
 }

 for(i=0;i< n;i++)
 {
  if(arr[i]%2==0)
  {
   printf("\n Even number  : %d",arr[i]);
  }
 }

    return 0;
}
```

SLIP 05

Q.1 Write a ‘C’ program to check whether a given character is a VOWEL or CONSONANT using switch-case statement.

```
#include <stdio.h>

int main()
{
    char ch;

    printf("Enter any alphabet: ");
    scanf("%c", &ch);

    switch(ch)
    {
        case 'a':
            printf("Vowel");
            break;
        case 'e':
            printf("Vowel");
            break;
        case 'i':
            printf("Vowel");
            break;
        case 'o':
            printf("Vowel");
            break;
        case 'u':
            printf("Vowel");
            break;
        case 'A':
            printf("Vowel");
            break;
        case 'E':
            printf("Vowel");
            break;
        case 'I':
            printf("Vowel");
            break;
        case 'O':
            printf("Vowel");
            break;
        case 'U':
            printf("Vowel");
```

```
            break;
        default:
            printf("Consonant");
    }

    return 0;
}
```

Q2) Write a recursive function to find the factorial of a given number.

```
#include<stdio.h>
 int fact(int n);
int main()
{
    int n;
    printf("Enter a positive integer: ");
    scanf("%d",&n);
    printf("Factorial of %d = %d", n, fact(n));
    return 0;
}

 int fact(int n)
{
    if (n>=1)
        return n*fact(n-1);
    else
        return 1;
}
```

SLIP 07

Q1) Write a ‘C’ program to accept a number and display the first ten multiples of that number.

```
#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;
}
```

Q2) Write a C program to accept an array of 5 numbers, store the squares of these numbers in another array and display it.

```
int main()
{

     int n,i,a[100],squ;
    printf("enter the size of an array :");
    scanf("%d",&n);
    printf("enter the elements :\n");
    for(i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }



    for(i=0;i<n;i++)
    {
    squ=a[i]*a[i];
    printf("Square of the %d : %d\n",a[i],squ);
    }

       return 0;

   }
```

SLIP 09

Q1) Write a program to accept an integer and reverse the number. Example: Input: 123, Output 321.

```
#include <stdio.h>

int main()
{
    int num, reversedNumber = 0, remainder;

    printf("Enter an integer: ");
    scanf("%d", &num);

    while(num != 0) {
        remainder = num % 10;
        reversedNumber = reversedNumber * 10 + remainder;
        num /= 10;
    }

    printf("Reversed Number = %d", reversedNumber);
    return 0;
}
```

Q2) Accept two numbers m & n and display all prime numbers between m & n.

```
#include <stdio.h>

int main()
{

	int a, b, i, j, flag;

	printf("Enter lower bound of the interval: ");
	scanf("%d", &a);

	printf("Enter upper bound of the interval: ");
	scanf("%d", &b);


	printf("Prime numbers between %d and %d are: ", a, b);

	for (i = a; i <= b; i++)
	{
		if (i == 1 || i == 0)
		continue;

		flag = 1;

		for (j = 2; j <= i / 2; ++j)
		{
			if (i % j == 0)
			{
				flag = 0;
				break;
			}
		}

		if (flag == 1)
		printf("%d ", i);
	}

	return 0;
}
```

SLIP 12

Q1)Write a ‘C’ program to display output as follows *

```
 *
* *
* * *
* * * *
* * * * *
```

```
#include <stdio.h>

int main()
{
     int rows;

     printf("\n Enter number of rows from user :  ");
     scanf("%d",&rows);

    // first loop for printing rows
    for (int i = 0; i < rows; i++)
    {

        // second loop for printing character in each rows
        for (int j = 0; j <= i; j++)
        {
            printf("* ");
        }
        printf("\n");
    }
    return 0;
}
```

Q2) Write a menu driven program, which accepts two integers and an operator as a character (+ - * /), performs the corresponding operation and displays the result.

```
#include <stdio.h>
int main()
{
    int X,Y;
    int Z;

    printf("\n Enter First Number : ");
    scanf("%d",&X);

    printf("\n Enter Second Number : ");
    scanf("%d",&Y);

    printf("\n -----OUTPUT-------------\n");
    Z = X + Y;
    printf("\n Addition +  of %d  and %d is   :   %d",X,Y,Z);

Z = X  - Y;
printf("\n Subtraction -  of %d  and %d is   :   %d",X,Y,Z);

Z = X * Y;
printf("\n Multiplication *  of %d  and %d is   :  %d",X,Y,Z);
Z = X / Y;
printf("\n Division /  of %d  and %d is   :   %d",X,Y,Z);

Z = X % Y;
printf("\n Modulo division of %d  and %d is   :   %d",X,Y,Z); return
0;

}
```

SLIP 13

Q1) Write a program to print output as follows (here number of rows=5)

```
1
1 2
1 2 3
 1 2 3 4
 1 2 3 4 5
```

```
#include <stdio.h>

int main()
{
     int rows;

     printf("\n Enter number of rows from user :  ");
     scanf("%d",&rows);

    // first loop for printing rows
    for (int i = 1; i <= rows; i++)
    {

        // second loop for printing character in each rows
        for (int j = 1; j <= i; j++)
        {
            printf("%d ",j);
        }
        printf("\n");
    }
    return 0;
}
```

Q2) Write a menu driven program using a switch case to accept the week day as number from user and display Monday to Sunday.

```
#include <stdio.h>

int main()
{
     int week;

    /* Input week number from user */
    printf("Enter week number(1-7): ");
    scanf("%d", &week);

    switch(week)
    {
        case 1:
            printf("Monday");
            break;
        case 2:
            printf("Tuesday");
            break;
        case 3:
            printf("Wednesday");
            break;
        case 4:
            printf("Thursday");
            break;
        case 5:
            printf("Friday");
            break;
        case 6:
            printf("Saturday");
            break;
        case 7:
            printf("Sunday");
            break;
        default:
            printf("Invalid input! Please enter week number between
1-7.");
    }

   return 0;
}
```

SLIP 16

Q1) Write a program to display all Armstrong numbers in between 1 to 500.

```
#include <stdio.h>

int main()
{
   int num, count = 1, rem, sum;

    while(count <= 500)
    {
        num = count;
        sum = 0;

        while(num)
        {
            rem = num % 10;
            sum = sum + (rem * rem * rem);
            num = num / 10;
        }

        if(count == sum)
        {
            printf("%d is a Armstrong number\n", count);
        }

        count++;
    }
        return 0;
```

Q2) Write a function to calculate xy ie power of given number , without using standard library function.

```
#include <stdio.h>

int main()
{
    int pow=1, x,y,i;

    /* Input a number to print table */
    printf("Enter number base: ");
    scanf("%d", &x);

    printf("Enter number exp: ");
    scanf("%d", &y);


    for(i=1; i<=y; i++)
    {
        pow=pow*x;
    }

    printf("\n The anser is %d",pow);
    return 0;
}
```

SLIP 20

Q1) Write a C program to check the given number is positive or negative.

```
#include <stdio.h>
int main()
{
    int num;
    /* Input number from user */
    printf("Enter any number: ");
    scanf("%d", &num);
     if(num > 0)
    {
        printf("Number is POSITIVE");
    }
    if(num < 0)
    {
        printf("Number is NEGATIVE");
    }
    if(num == 0)
    {
        printf("Number is ZERO");
    }

}
```

Q2) Write a C program to accept two numbers. Out of these two numbers , check whether both are equal, less or greater number.

```
#include<stdio.h>
int main ()
{
  int num1, num2;


  printf("\n Enter two number : ");
  scanf("%d%d",&num1,&num2);

  if (num1 == num2)
    printf("both are equal");
  else if (num1 > num2)
    printf("%d is greater", num1);
  else
    printf("%d is greater", num2);

  return 0;
}
```

SLIP 22

Q1) Write a function to calculate xy i.e. power of given number using standard library function.

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

int main()
{
  int base, exp;
    float res;
    printf("Enter base: ");
    scanf("%d", &base);
    printf("Enter exponent: ");
    scanf("%d", &exp);

    //pow() function to calculate power of a function
    res = pow(base, exp);

    printf("%d ^ %d = %f", base, exp, res);

    return 0;
}
```

Q2) Write C program to find the largest number among three numbers

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

int main()
{
    int a,b,c;
 printf("Enter 3 numbers  :   ");
 scanf("%d%d%d",&a,&b,&c);
 if(a>b && a>c)
  printf("\n Mximum number is a = %d",a);
 else if(b>a && b>c)
  printf("\n Mximum number is b = %d",b);
 else
   printf("\n Mximum number is c = %d",c);
   return 0;
}
```

SLIP 24

Q1 Write a ‘C’ Program to Find the Size of int, float, double, and char

```
#include <stdio.h>

int main()
{
    printf("\n ------------ OUTPUT-------------\n");

    printf("\n Size of Integer is: %d ",sizeof(int));
    printf("\n Size of Character is: %d ",sizeof(char));

    printf("\n Size of float is: %d ",sizeof(float));
    printf("\n Size of double is: %d ",sizeof(double));
    printf("\n Size of void is: %d ",sizeof(void));
    printf("\n Size of long int is: %d ",sizeof(long int));
    printf("\n Size of short int is: %d ",sizeof(short int));
  printf("\n Size of signed char is: %d ",sizeof(signed int));

    return 0;

}
```

Q2) Write a program to find the average of n numbers using array

```
#include <stdio.h>

int main()
{

   int a[100], sum=0;
   float avg;
 int i, n;

 printf("Enter n: ");
 scanf("%d", &n);

 /* Reading array */
 printf("Enter numbers:\n");
 for(i=0; i< n; i++)
 {
  printf("a[%d] = ", i);
  scanf("%d", &a[i]);
 }

 /* Finding sum */
 for(i=0; i< n; i++)
 {
  sum = sum + a[i];
 }

 /* Calculating average */
 avg = (float)sum/n;

 /* Displaying Result */
 printf("Sum is %d\n", sum);
 printf("Average is %.2f", avg);
    return 0;
}
```

SLIP 28

Q1) Write a ‘C’ program to check whether a given character is a VOWEL or CONSONANT using switch-case statement.

```
#include <stdio.h>

int main()
{
    char ch;

    printf("Enter any alphabet: ");
    scanf("%c", &ch);

    switch(ch)
    {
        case 'a':
            printf("Vowel");
            break;
        case 'e':
            printf("Vowel");
            break;
        case 'i':
            printf("Vowel");
            break;
        case 'o':
            printf("Vowel");
            break;
        case 'u':
            printf("Vowel");
            break;
        case 'A':
            printf("Vowel");
            break;
        case 'E':
            printf("Vowel");
            break;
        case 'I':
            printf("Vowel");
            break;
        case 'O':
            printf("Vowel");
            break;
        case 'U':
            printf("Vowel");
            break;
        default:
            printf("Consonant");
```

```
    }

    return 0;
}
```

Q2) Write a program to accept an integer and check if it is even or odd. Also check given number is positive or negative .

```
#include <stdio.h>

int main()

{

    int num;

    /* Input number from user */

    printf("Enter any number: ");

    scanf("%d", &num);


    if(num > 0)

        printf("Number is POSITIVE");

    else

    if(num < 0 )

        printf("Number is NEGATIVE");


    if(num % 2 == 0)

        printf("%d is even.", num);

    else

        printf("%d is odd.", num);


}
```

SLIP 29

Q1) Write a program to display alphabets (A-Z) using for loop (Use ASCII value)

```
#include<stdio.h>
int main ()
{

    int i;
    printf("Alphabets from (A-Z) are:\n");

    // ASCII value of A=65 and Z=90
    for (i = 65; i <= 90; i++)
    {

        printf("%c ", i);
    }
  return 0;
}
```

Q2) Write a C program to accept an array of 5 numbers, store the squares of these numbers in another array and display it.

```
int main()
{

     int n,i,a[100],squ;
    printf("enter the size of an array :");
    scanf("%d",&n);
    printf("enter the elements :\n");
    for(i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }



    for(i=0;i<n;i++)
    {
    squ=a[i]*a[i];
    printf("Square of the %d : %d\n",a[i],squ);
    }

       return 0;

   }
```

SLIP 30

Q1) Write a ‘C’ program to accept any alphabet. Change its case and display the changed case.

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

int main()
{
    char ch;
    printf("\n Enter any Alphabet : ");
    scanf("%c",&ch);

    if(isupper(ch))
      printf("After Change Case  :  %c",tolower(ch));
    else
       printf("After Change Case  :  %c",toupper(ch));


    return 0;
}
```

Q2) Write a menu driven program using a switch case to accept the week day as number from user and display name from Monday to Sunday.

```
#include <stdio.h>

int main()
{
     int week;

    /* Input week number from user */
    printf("Enter week number(1-7): ");
    scanf("%d", &week);

    switch(week)
    {
        case 1:
            printf("Monday");
            break;
        case 2:
            printf("Tuesday");
            break;
        case 3:
            printf("Wednesday");
            break;
        case 4:
            printf("Thursday");
            break;
        case 5:
            printf("Friday");
            break;
        case 6:
            printf("Saturday");
            break;
        case 7:
            printf("Sunday");
            break;
        default:
            printf("Invalid input! Please enter week number between
1-7.");
    }

   return 0;
}
```