SHRI SHANKARACHARYA GROUP OF INSTITUTIONS

FACULTY OF ENGINEERING AND TECHNOLOGY

CERTIFICATE

THIS IS TO CERTIFY THAT THIS PRACTICAL RECORD CONTAINS THE BONAFIDE PRACTICAL WORK FOR THE SUBJECT

"PROGRAMMING AND LOGIC BUILDING IN C"

OF MR/MISS

SUFIYA _PARVEEN

DURING THE ACADEMIC SESSION **2018-2019**

OF **3RD** SEMESTER SECTION **"C"**

ROLL NO. **20**

DATE :26/11/18

SIGNATURE OF HOD SIGNATURE OF LECTURER

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LIST OF EXPERIMENTS

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2. Write a C program to take a 5-digit number as input and calculate the sum of its digits.

3. Write a C program to take three sides of a triangle as input and verify whether the triangle is an isosceles, scalene or an

equilateral triangle.

4. Write a C program that will take 3 positive integers as input and verify whether they form a Pythagorean triplet or not.

5. Write a C program to print all prime numbers between a given range of numbers.

6. Write a C program to define a function that will take an integer as argument and return the sum of digits of that integer

7. Write a C program to define a macro that can calculate the greater of two of its arguments. Use this macro to calculate the

greatest of 4 integers.

8. Write a C program to define a recursive function that will print the reverse of its integer argument.

9. Write a C program to print the sum of first N even numbers using recursive function.

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program will ask the user to input the details of 5 students and print the details of all the students whose total marks is

greater than a given value.

14. Write a C program to define a union Contact that will contain the members Mobile no and E-mail id. Now define a

structure Employee that will contain name, UID,PhNo, emailId and a variable of type Contact as members. The program

will ask the user to give the details of five Employees including contact details. Print the details of all the Employees.

15. Write a C program that will ask the user to input a file name and copy the contents of that file into another file.

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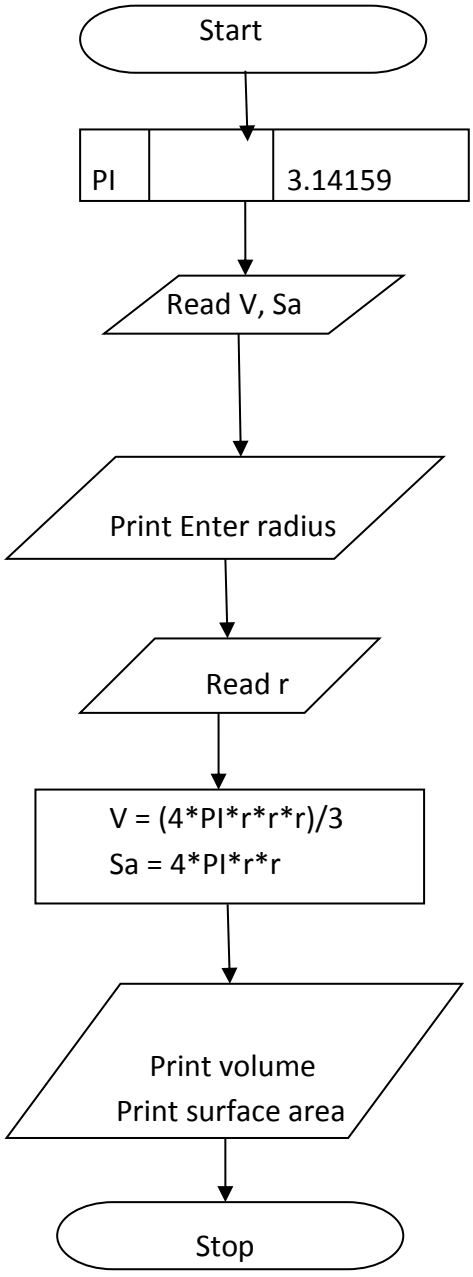
integers.

17. Write a C program to process sequential file for payroll data.

18. Write a C program to process random file of library data.

FLOWCHART


Start
PI
3.14159
Read V, Sa
Print Enter radius
Read r
V = (4*PI*r*r*r)/3
Sa = 4*PI*r*r
Print volume
Print surface area
Stop

EXPERIMENT No. 1

AIM : Write a program to take the radius of a sphere as input and print its volume and surface area.

CODING :

```
/*… PROGRAM TO CALCULATE VOLUME AND SURFACE AREA OF A
  SPHERE…*/
  #include<stdio.h>
  #include<conio.h>
  #define PI 3.14159
  void main( )
  {
    float v,sa,r;
    clrscr( );
    printf("Enter radius of sphere :");
    scanf("%f",&r);
    v=(4*PI*r*r*r)/3;
    sa=4*PI*r*r;
    printf("Volume = %f\nSurface area=%f",v,sa);
    getch( );
  }
```

INPUT:

Enter radius of sphere :5

OUTPUT :

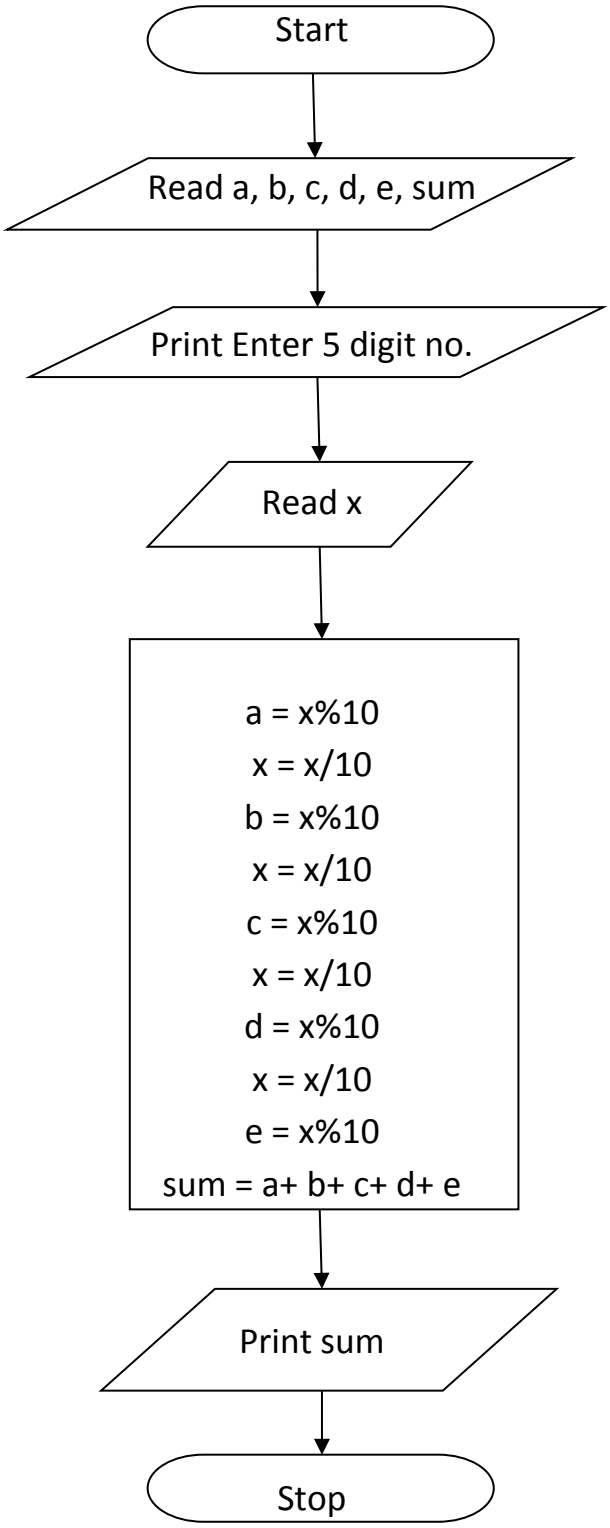
Volume = 392.750000

Surface area=314.200012

VIVA -VOCE QUESTIONS

1. What does void main(void) mean.
2. In C can we have comments inside a comment.
3. How do variables and symbolic names differ?
4. What is the main difference between an identifier and a keyword?

FLOWCHART


Start
Read a, b, c, d, e, sum
Print Enter 5 digit no.
Read x
a = x%10
x = x/10
b = x%10
x = x/10
c = x%10
x = x/10
d = x%10
x = x/10
e = x%10
sum = a+ b+ c+ d+ e
Print sum
Stop

EXPERIMENT No. 2

AIM : Write a program to take a 5-digit number as input and calculate the sum of its digits.

CODING:

```
#include<stdio.h>
#include<conio.h>
void main( )
{
        int a,b,c,d,e,sum,x;
        printf("enter a five digit number:");
        scanf("%d",&x);
        a = x % 10;
        x = x / 10;
        b = x % 10;
        x = x / 10;
        c = x % 10;
        x = x / 10;
        d = x % 10;
        x = x / 10;
        e = x % 10;
        Sum = a + b + c + d + e;
        printf("\nsum = %d",sum);
        getch( );
```

INPUT :

enter a five digit number:23456

OUTPUT:

sum = 20

VIVA -VOCE QUESTIONS

1. What are the various operators supported by C.
2. Evaluate the following expressions and show their hierarchy.

a) g = big / 2 + big * 4 / big – big + abc / 3;

(abc = 2.5, big = 2, assume g to be a float)

b) on = ink * act / 2 + 3 /2 * act + 2 + tig;

(ink = 4, act = 1, tig = 3.2, assume on to be an int)

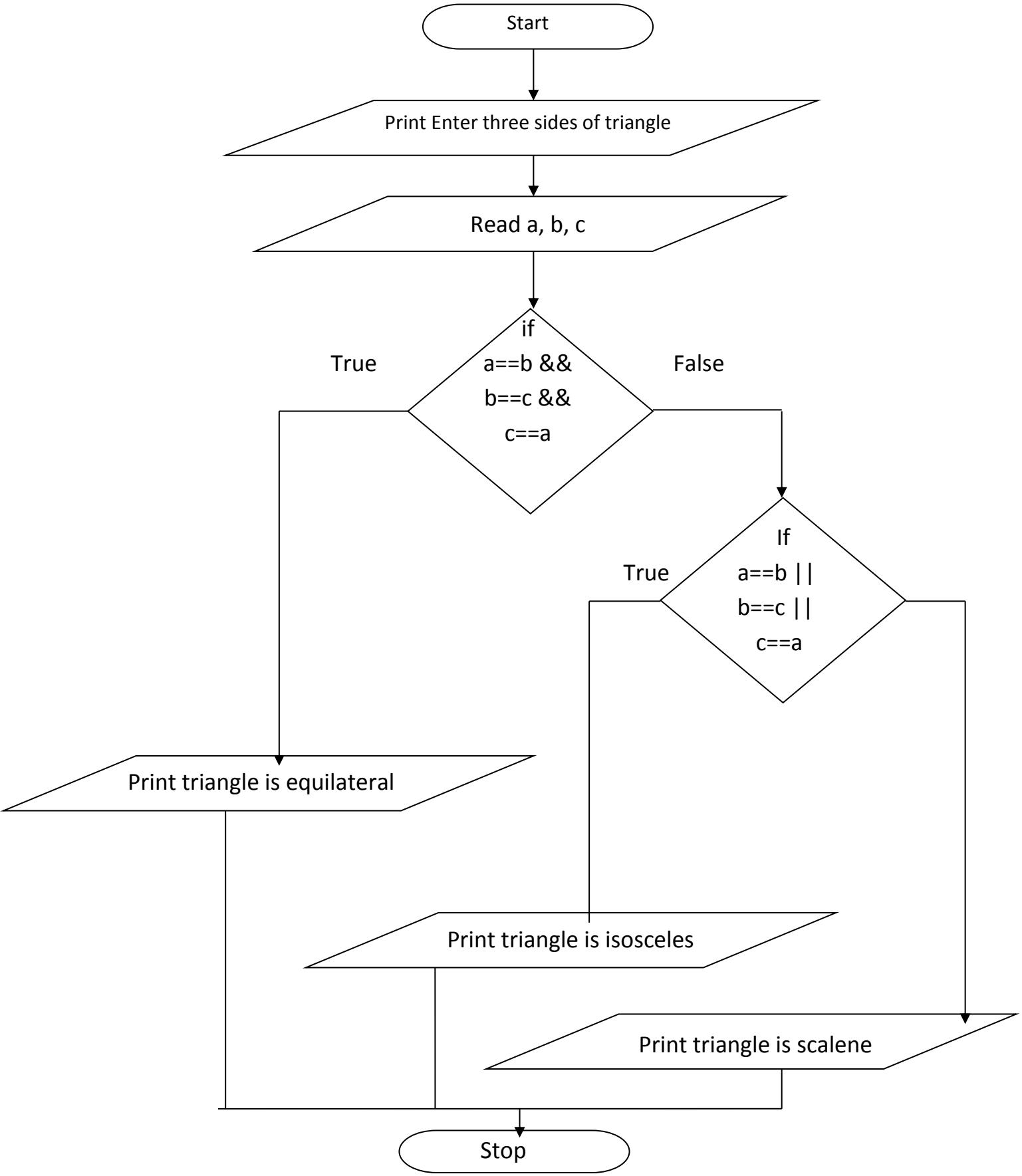
c) s = qui * add / 4 – 6 / 2 + 2 / 3 * 6 / god;

(qui = 4, add = 2, god = 2, assume s to be an int)

d) s = 1 / 3 * a / 4 – 6 / 2 + 2 / 3 * 6 / g;

(a = 4, g = 3, assume s to be an int)

FLOWCHART


Start
Print Enter three sides of triangle
Read a, b, c
if
a==b &&
b==c &&
c==a
True
False
If
a==b ||
b==c ||
c==a
True
Print triangle is equilateral
Print triangle is isosceles
Print triangle is scalene
Stop

EXPERIMENT No. 3

AIM : Write a program to take three sides of a triangle as input and verify whether the triangle is an isosceles, scalene or an equilateral triangle.

CODING:

```
/*…PROGRAM TO VERIFY WHETHER THE TRIANGLE IS AN ISOSCELES,
 SCALARS OR AN EQUILATERAL TRIANGLE…*/
#include<stdio.h>
 #include<conio.h>
 void main( )
 {
   int a,b,c;
        clrscr( );
         printf("Enter the three sides of a triangle:");
         scanf("%d%d%d",&a,&b,&c);
         if(a==b && b==c &&c==a)
         printf("\nTriangle is equilateral");
        else
        {
              if(a==b || b==c || c==a)
              printf("\nTriangle is isosceles");
              else
              printf("\nTriangle is scalars");
         }
        getch( );
 }
```

INPUT :

Enter the three sides of a triangle:2 2 2

OUTPUT :

Triangle is equilateral

INPUT :

Enter the three sides of a triangle:2 3 4

OUTPUT :

Triangle is scalars

INPUT :

Enter the three sides of a triangle:2 3 2

OUTPUT :

Triangle is isosceles

VIVA -VOCE QUESTIONS

1. What would be the output of the following :

```
main( )
{
  int i = 4, j, num;
  j = (num < 0 ? 0 : num * num);
  printf("\n%d", j);
  }
```

2. Rewrite the following using conditional operator :

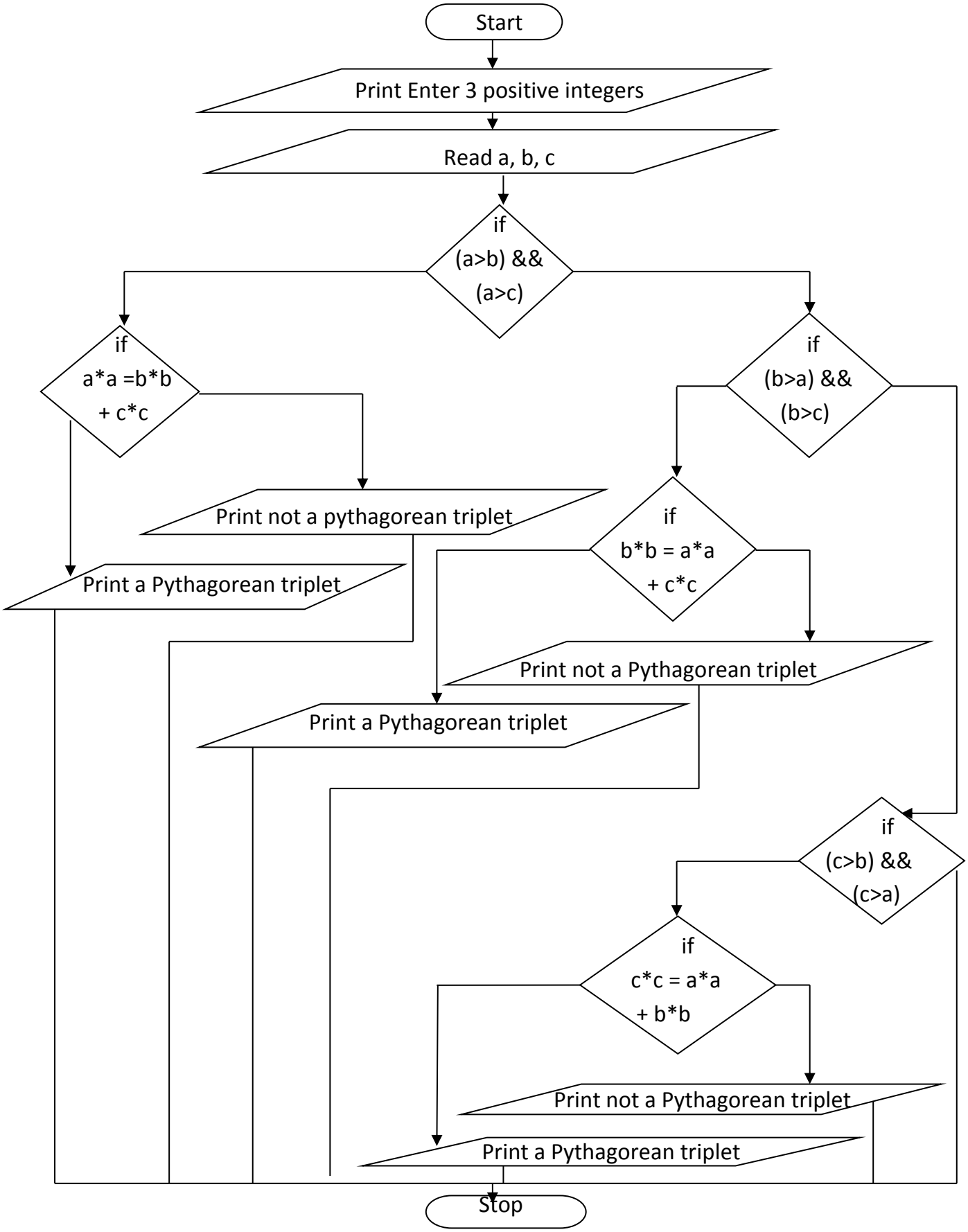
```
main( )
{
  int x, min, max;
  scanf("%d%d", &max, &x);
  if(x < max)
   max = x;
```

```
 else
  min = x;
}
```

3. What would be the output of the following :

```
int i = 5, j = 3;
if(i + j)
  printf("HELLO");
else
 printf("HI");
```

FLOWCHART


Start
Print Enter 3 positive integers
Read a, b, c
if (a>b) && (a>c)
if a*a =b*b + c*c
Print not a pythagorean triplet
Print a Pythagorean triplet
if (b>a) && (b>c)
if b*b = a*a + c*c
Print not a Pythagorean triplet
Print a Pythagorean triplet
if (c>b) && (c>a)
if c*c = a*a + b*b
Print not a Pythagorean triplet
Print a Pythagorean triplet
Stop

EXPERIMENT No. 4

AIM : Write a program to take three positive integers as input and verify whether they form a Pythagorean triplet.

CODING :

```
#include<conio.h>
   #include<conio.h>
   int main()
    {
            int a,b,c;
            clrscr();
            printf("Enter three positive integers : ");
            scanf("%d%d%d",&a,&b,&c);
             if((a>b)&&(a>c))
             {
                      if((a*a)==((b*b)+(c*c)))
                     {
                         printf("The numbers form Pythagorean triplet");
                     }
                     else
                    {
                         printf("The numbers do not form Pythagorean triplet");
                     }
             }
             else
             if((b>a)&&(b>c))
            {
                     if((b*b)==((a*a)+(c*c)))
                    {
                      printf("The numbers form Pythagorean triplet ");
```

```
                    }
                    else
                    {
                      printf("The numbers do not form Pythagorean triplet ");
                    }
                }
                else
                if((c>b)&&(c>a))
                {
                    if((c*c)==((b*b)+(a*a)))
                    {
                        printf("The numbers form Pythagorean triplet ");
                    }
                    else
                    {
                        printf("The numbers do not form Pythagorean triplet ");
                    }
                }
                getch();
                return 0;
            }
```

INPUT :

Enter three positive integers : 3 4 5

OUTPUT :

The numbers form Pythagorean triplet

INPUT :

Enter three positive integers : 2 3 4

OUTPUT :

The numbers do not form Pythagorean triplet

VIVA -VOCE QUESTIONS

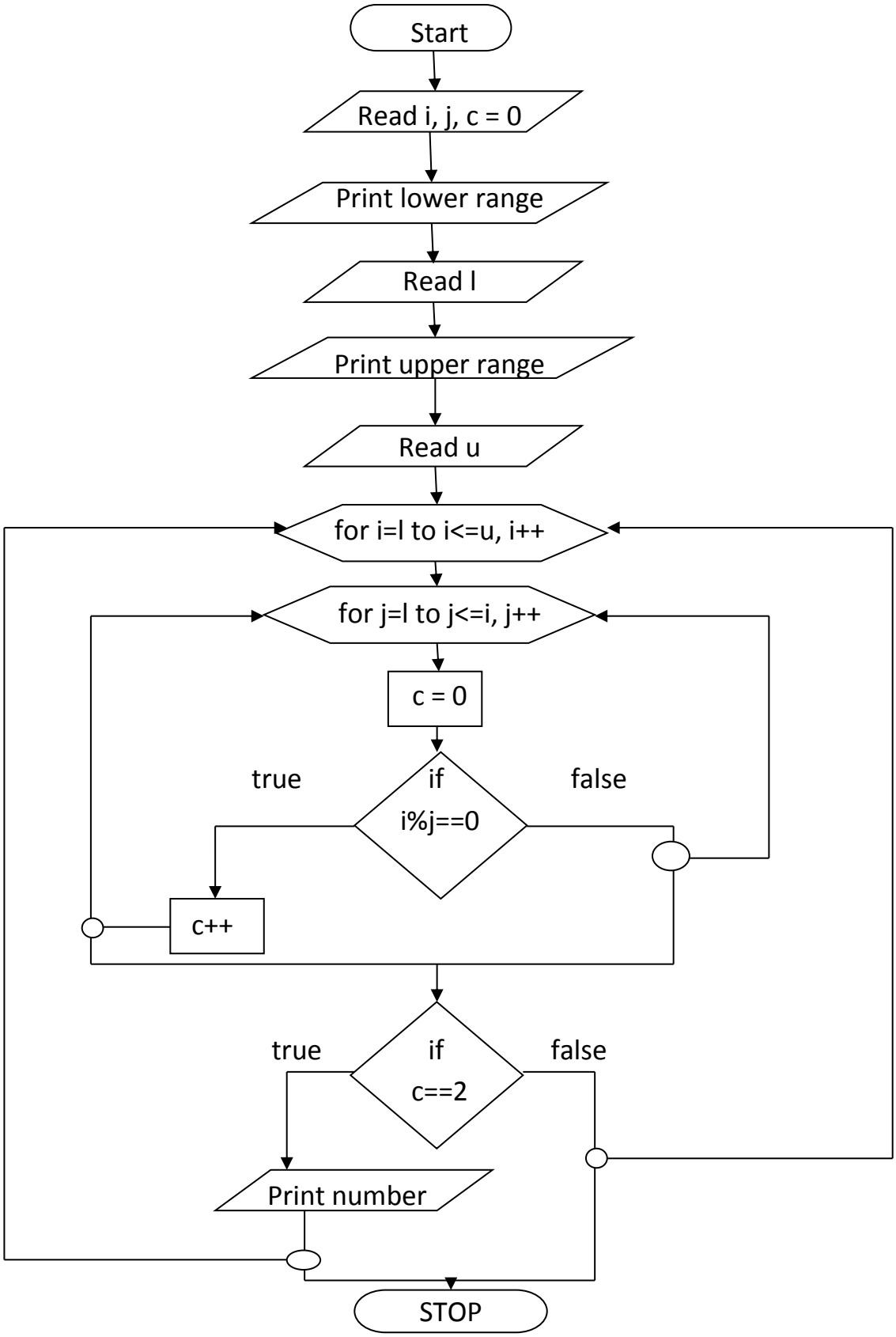
1. Write a program to calculate the division of students according to the following rules:

   Above and equal to 75% -honours
   Above and equal to 60% but less than75%- First division
   Above and equal to 45% but less than60%- Second division
   less than 45%-Fail

2. What do you mean by else-if ladder ?

3. In which situation do we use else-if ladder?

FLOWCHART



EXPERIMENT No. 5

Write a program to print all the Prime numbers between a given range.

CODING :

```
#include<stdio.h>
#include<conio.h>
void main( )
{
        int i, j, l, u, c=0;
        printf("enter the lower range:");
        scanf("%d",&l);
        printf("\nenter the upper range:");
        scanf("%d",&u);
       for(i=l;i<=u;i++)
       {
          for(j=1;j<=i;j++)
          {
             c=0;
             if(i%j= =0)
             c++;
          }
          if(c= =2)
            printf("%d\n",i);
        }
        getch( );
   }
```

INPUT :

enter the lower range:10
enter the upper range:20

OUTPUT :

11
13
17
19
23
29
31
37
41
43
47

VIVA-VOCE QUESTIONS

1. What do you mean by nested for loop?

2. What would be the output of the following :

```
for(i=1;i<=5;i++)
{
    for(j=1;j<=i;j++)
   {
     printf("%d",j);
    }
}
```

EXPERIMENT No. 6

AIM : Write a program that will take an integer as argument and return the sum of its digits using a user defined function.

PROGRAM :

```
#include<stdio.h>
#include<conio.h>
void main( )
{
        int sum=0,num;
        int add(int);
        clrscr( );
        printf("Enter any positive number :");
        scanf("%d",&num);
        sum=add(num);
        printf("\nSum of the digits of given number is :%d",sum);
        getch( );
}
int add(int n)
{
        int y,sum=0;
        while(n>0)
       {
            y=n%10;
            sum=sum+y;
             n=n/10;
```

```
        }

        return(sum);

    }
```

INPUT :

Enter any positive number :8228

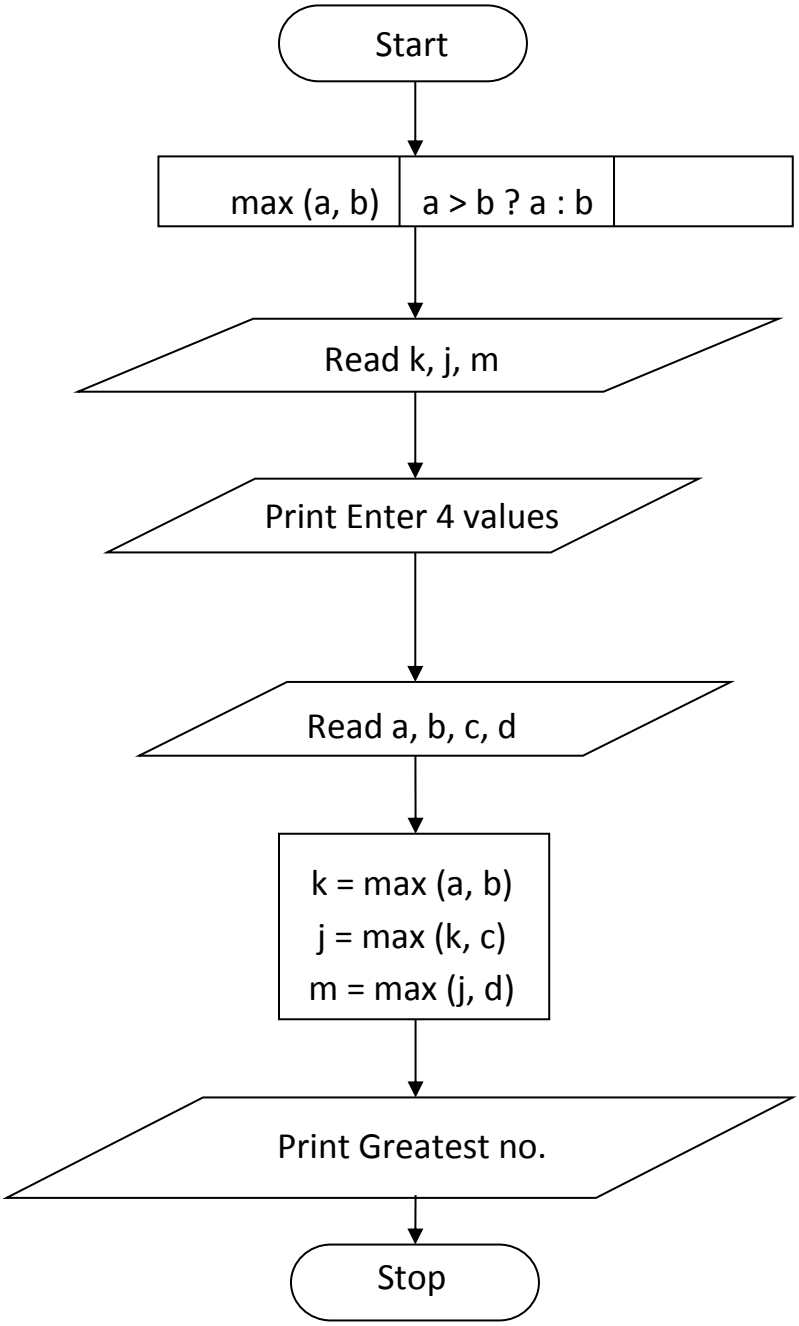
OUTPUT :

Sum of the digits of given number is :20

VIVA-VOCE QUESTIONS

1. What do you mean by functions?
2. The main is user defined function. How does it differ from other user-defined functions.
3. What is prototyping? Why it is necessary?
4. Distinguish between following:
   a) Actual and formal arguments.
   b) Global and local variables.

FLOWCHART


Start
max (a, b)
a > b ? a : b
Read k, j, m
Print Enter 4 values
Read a, b, c, d
k = max (a, b)
j = max (k, c)
m = max (j, d)
Print Greatest no.
Stop

EXPERIMENT No. 7

AIM : Write a program to define a macro that can calculate the greater of two of its arguments. Use this macro to calculate the greatest of 4 integers.

PROGRAM :

```
#define max(a,b) ((a>b)?a:b)

#include<stdio.h>

#include<conio.h>

void main()

{

        int a,b,c,d,k,j,m;

        clrscr( );

        printf("Enter three values:");

        scanf("%d%d%d%d",&a,&b,&c,&d);

        k=max(a,b);

        j=max(k,c);

        m=max(j,d);

        printf("\nGreatest number is :%d",m);

        getch();

 }
```

OUTPUT :

Enter three values:4 7 9 6

Greatest number is : 9

VIVA-VOCE QUESTIONS

1. What do you mean by preprocessor directive?
2. Why macros are considered to be harmful for long programs?
3. Write a program to calculate square of a number using macro.

EXPERIMENT No. 8

AIM : Write a program to define a recursive function that will print the reverse of its integer argument.

PROGRAM :

```
#include<stdio.h>
#include<conio.h>
  int rev(int n);
  int s=0;
  void main()
  {
       int n,r;
       printf("enter a number:");
       scanf("%d",&n);
       r=rev(n);
       printf("reverse of %d is=%d",n,r);
       getch();
  }
  int rev(int n)
  {
      if(n==0)
      return 0;
      else
      {
```

```
        s=s*10+n%10;
        rev(n/10);
      }
    return s;
  }
```

OUTPUT:

enter a number:234

reverse of 234 is=432

EXPERIMENT No. 9

AIM : Write a program to print the sum of first N even numbers using recursive function.

PROGRAM :

```
#include<stdio.h>
#include<conio.h>
int sum(int n);
int s=0;
void main()
{
        int n,x;
        clrscr();
        printf("enter the value of n:");
        scanf("%d",&n);
        x=sum(n);
        printf("sum of %d even numbers is :%d",n,x);
        getch();
}
int sum(int n)
{
        if(n==0)
        return 0;
        else
```

```
        {
            s=s+2*n;
            sum(n-1);
         }
         return s;
}
```

OUTPUT:

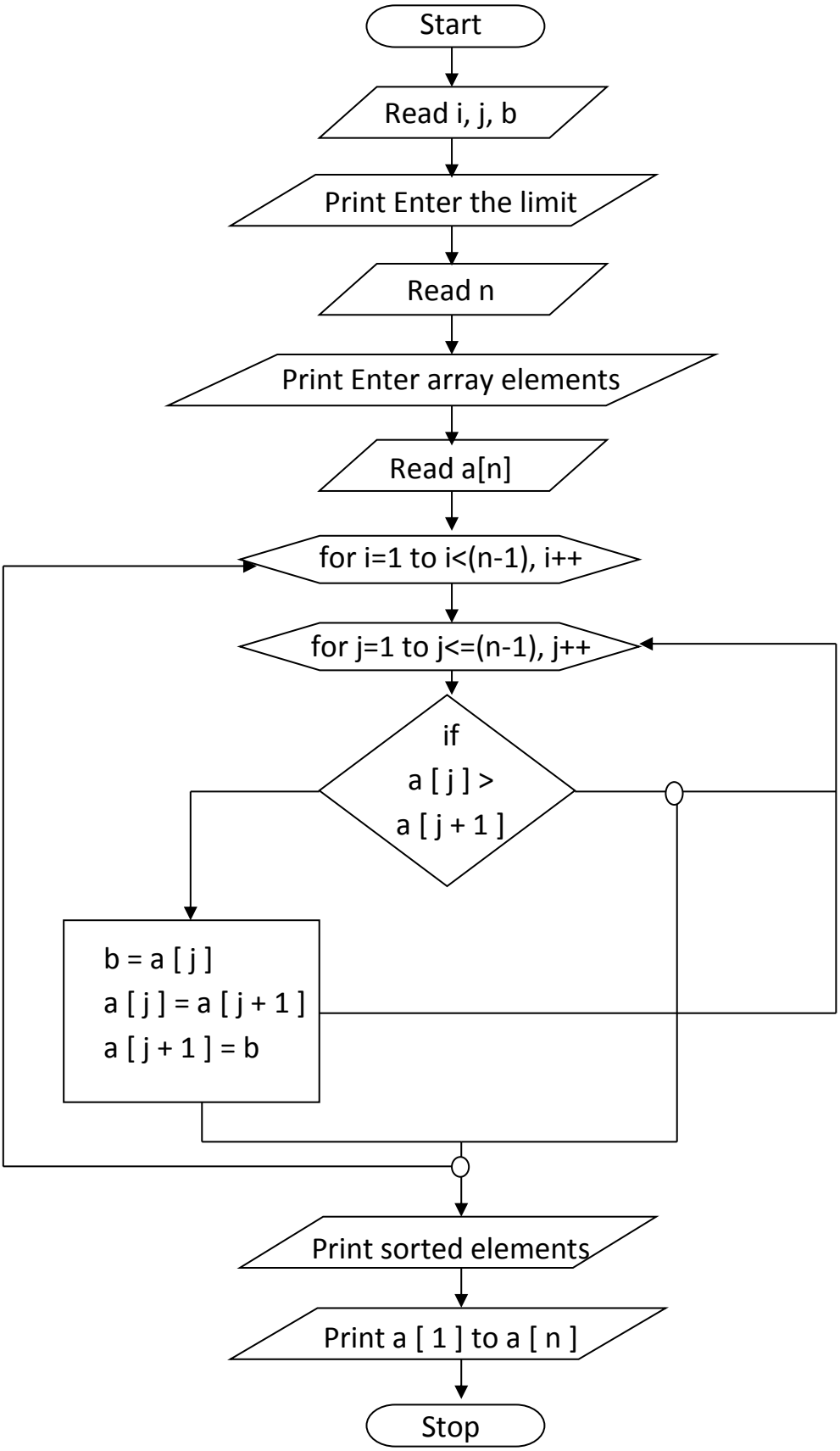
enter the value of n:6

sum of 6 even numbers is :42

VIVA-VOCE QUESTIONS

1. What do you mean by recursion?
2. What is the difference between iteration and recursion?

FLOWCHART


Start
Read i, j, b
Print Enter the limit
Read n
Print Enter array elements
Read a[n]
for i=1 to i<(n-1), i++
for j=1 to j<=(n-1), j++
if
a [j] >
a [j + 1]
b = a [j]
a [j] = a [j + 1]
a [j + 1] = b
Print sorted elements
Print a [1] to a [n]
Stop

EXPERIMENT No. 10

AIM : Write a program to sort an array using bubble sort.

PROGRAM :

```
#include<conio.h>
#include<stdio.h>
int main()
{
        int i,j,b,n,a[10];
        clrscr();
        printf("Enter The Limit : ");
        scanf("%d",&n);
        printf("\nEnter array Elements : \n");
        for(i=1;i<=n;i++)
        {
scanf("%d",&a[i]);
  }
  for(i=1;i<n-1;i++)
  {
 for(j=1;j<n-i;j++)
 {
if(a[j]>a[j+1])
{
```

```
        b=a[j];
        a[j]=a[j+1];
        a[j+1]=b;
    }
      }
    }
    printf("\nThe Sorted Elements : \n");
    for(i=1;i<=n;i++)
    printf(" %d ",a[i]);
   getch();
   return 0;
         }
```

INPUT :

Enter The Limit :6

Enter array Elements :

2

5

3

7

6

1

OUTPUT :

The Sorted Elements :

1

2

3

5

6

7

VIVA-VOCE QUESTIONS

1. What would be the output of the following :

a)
```
main( )
{
   int num[26], temp;
   num[0] = 100;
   num[25] = 200;
   temp = num[25];
   num[25] = num[0];
   num[0] = temp;
   printf("\n%d %d", num[0], num[25]);
}
```

b)
```
main()
{
   int array[26], i;
   for(i = 0;i < =25;i ++)
```

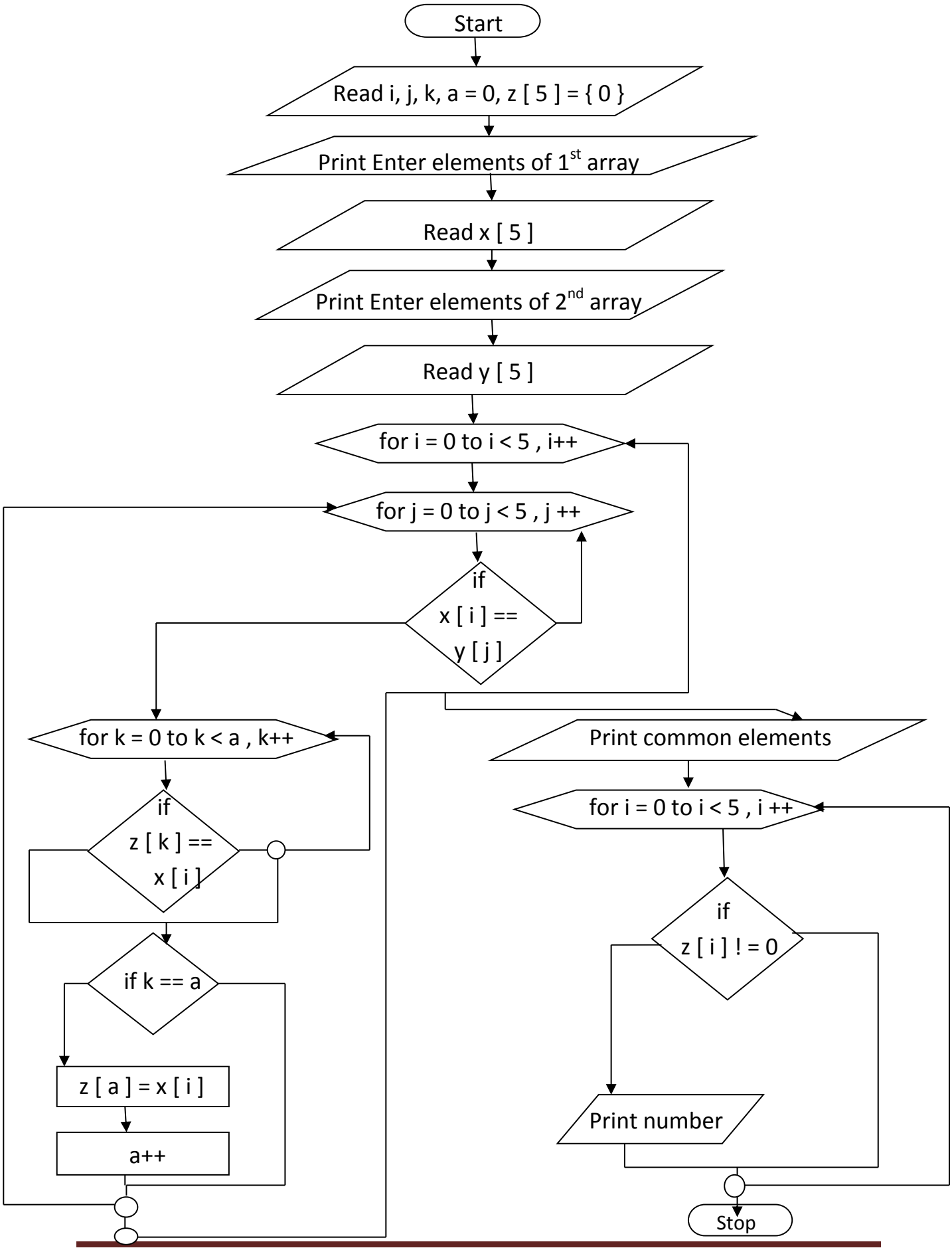
```
{
   array[i] = 'A' + i;
   printf("\n%d  %c", array[i], array[i]);
 }
}
```

2. Which element of array does this expression reference?

num[4]

3. Are the following declaration correct ?

```
int a(25);
int size = 10, b[size];
int c = {0,1,2};
```


Start
Read i, j, k, a = 0, z [5] = { 0 }
Print Enter elements of 1st array
Read x [5]
Print Enter elements of 2nd array
Read y [5]
for i = 0 to i < 5 , i++
for j = 0 to j < 5 , j ++
if x [i] == y [j]
for k = 0 to k < a , k++
if z [k] == x [i]
if k == a
z [a] = x [i]
a++
Print common elements
for i = 0 to i < 5 , i ++
if z [i] ! = 0
Print number
Stop

EXPERIMENT No. 11

AIM : Write a program that will take two integer arrays as input and insert the common elements of both array into a third array.

PROGRAM :

```
#include<conio.h>
#include<stdio.h>
int main()
 {
        int i,j,k,a=0,x[5],y[5],z[5]={0};
        clrscr();
        printf("\nEnter The Elements For 1st Array : \n");
        for(i=0;i<5;i++)
        {
            scanf("%d",&x[i]);
         }
         printf("\nEnter The Elements For 2nd Array : \n");
         for(i=0;i<5;i++)
          {
                scanf("%d",&y[i]);
          }
         for(i=0;i<5;i++)
         {
                  for(j=0;j<5;j++)
```

```
                {
                        if(x[i]==y[j])
                        {
                                for(k=0;k<a;k++)
                                {
                                     if(z[k]==x[i])
                                     break;
                                 }
                                  if(k==a)
                                  {
                                     z[a]=x[i];
                                     a++;
                                  }
                         }
                }
}
 printf("\nThe Common Elements are : \n");
 for(i=0;i<5;i++)
 {
    if(z[i]!=0)
       printf("\n%d",z[i]);
 }
getch();
```

```
        return 0;
    }
```

INPUT :

Enter The Elements For 1st Array :

1

2

3

4

5

Enter The Elements For 2nd Array :

2

5

6

7

8

OUTPUT :

The Common Elements are :

2

5

VIVA-VOCE QUESTIONS

1. What is the difference between the 5's in these two expressions ?

```
int num[5];

num[5] = 11;
```

a) first is particular element, second is type
b) first is array size, second is particular element
c) first is particular element, second is array size
d) both specify array size

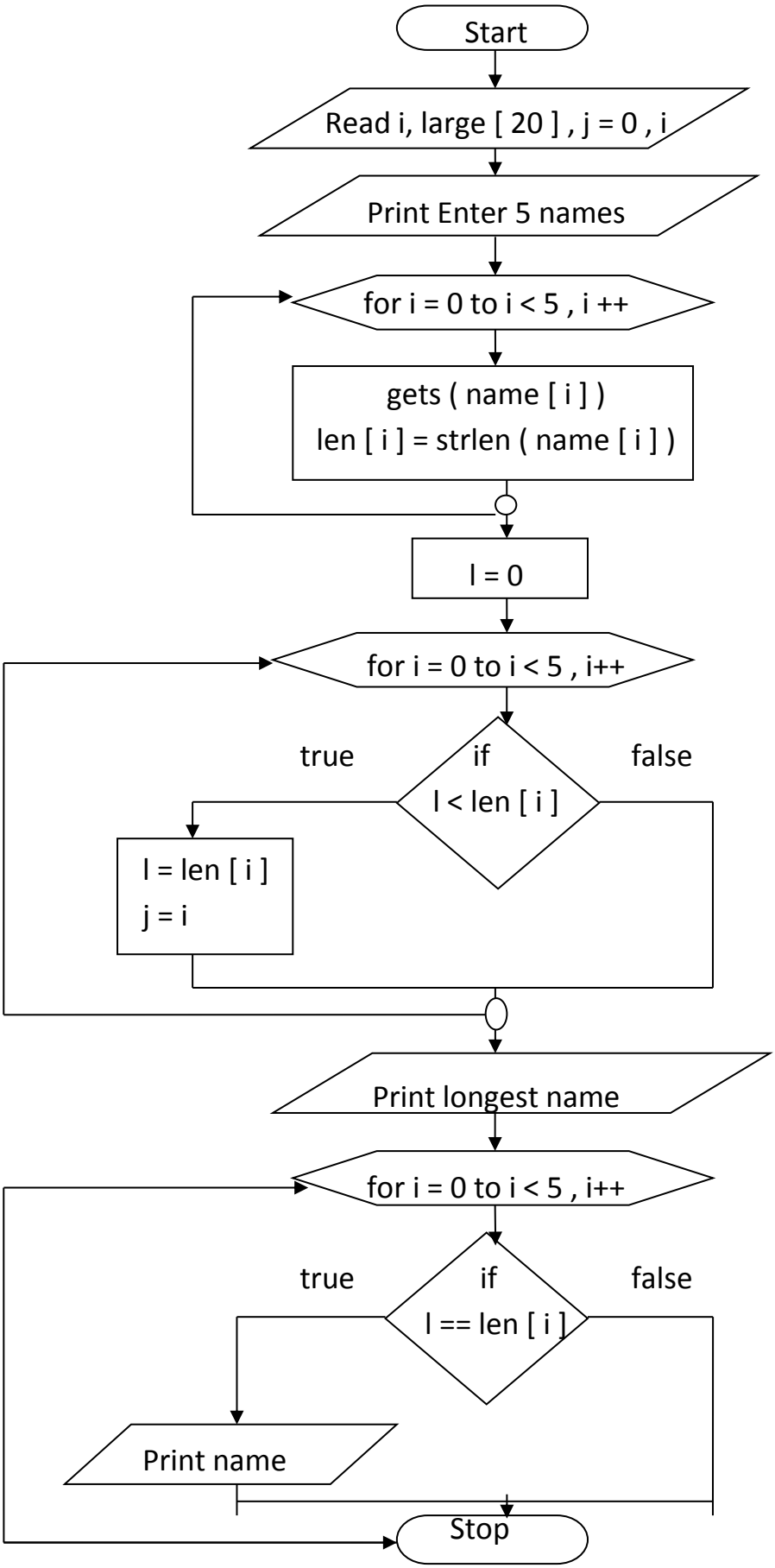
1. An array is a collection of
a) different data types scattered throughout memory
b) the same data type scattered throughout memory
c) the same data type placed next to each other in memory
d) different data types placed next to each other in memory

2. Point out the errors, if any in the following :

```
main( )
{
  int a[10], i;
  for(i = 1;i < = 10;i ++)
  {
    scanf("%d", a[i]);
    printf("%d", a[i]);
  }
```

3. What would be the output of the following :

```
main( )
{
  int sub[50], i;
  for(i = 0;i < = 48;i ++)
  {sub[i] = i;
    printf("\n%d", sub[i]);
  } }
```


Start
Read i, large [20] , j = 0 , i
Print Enter 5 names
for i = 0 to i < 5 , i ++
gets (name [i])
len [i] = strlen (name [i])
l = 0
for i = 0 to i < 5 , i++
true
if
l < len [i]
false
l = len [i]
j = i
Print longest name
for i = 0 to i < 5 , i++
true
if
l == len [i]
false
Print name
Stop

EXPERIMENT No. 12

AIM : Write a program take 5 names as input and print the longest name.

PROGRAM :

```
#include<conio.h>
#include<stdio.h>
#include<string.h>
void main()
 {
        char name[5][15];
        int l,len[10],large[20],j=0,i,;
        clrscr();
        printf("Enter five names:");
        for(i=0;i<5;i++)
        {
            gets(name[i]);
            len[i]=strlen(name[i]);
         }
         l=0;
         for(i=0;i<5;i++)
         {
              if(l<len[i])
             {
```

```
                l=len[i];
                j=i;
               }
          }
          printf("\nLongest name(s) is :");
          for(i=0;i<5+;i++)
          {
              if(l==len[i])
              printf("%s\n",name[i]);
          }
          getch();
     }
```

INPUT :

Enter five names:

Dennis Ritchie

B Ram

Peterson

Adam

Sam

OUTPUT :

Longest name(s) is : Dennis Ritchie

VIVA -VOCEQUESTIONS

1. In which file the string manipulation functions are defined?

a) stdlib.h
b) string.h
c) stdio.h
d) conio.h

2. If we read entire line “NEW YORK” with the following statement

scanf(“%s%s”, adr1, adr2);

then what would be the values of adr1 and adr2?

3. How can we initialize a string?

4. What is the difference between scanf and gets function?

5. If the value of string city is NEW YORK then

What would be the output of the following :

a) printf(“%10.4s”, city);
b) printf(“%-10.4s”, city);
c) printf(“%4s”, city);
d) printf(“%10s”, city);

EXPERIMENT No. 13

AIM : Write a program to define a structure student that will contain the roll number, name and total marks of a student the program will ask the user to input details of 5 students and print the details of all the students whose total marks is greater then a given value.

PROGRAM :

```
#include<stdio.h>
#include<conio.h>
void main( )
{
    struct student
   {
       int roll;
       char name[10];
        float marks;
    }st[5];
    int i;
    printf("Enter details of students their roll no, name & marks:");
    for(i=0;i<=5;i++)
       scanf("%d%s%f",&st[i].roll,st[i].name,&st[i].marks);
   for(i=0;i<=5;i++)
   {
        if(st[i].marks>65)
       {
```

```
                printf("%d %s %f",st[i].roll,st[i].name,st[i].marks);
            }
        }
        getch( );
    }
```

INPUT :

Enter details of students their roll no, name & marks:

100 C 65

101 XYZ 75

119 DEF 55

102 GHI 70

103 HJY 80

OUTPUT :

102 XYZ 75.000000

103 GHI 70.000000

104 HJY 80.000000

VIVA-VOCE QUESTIONS

1. What is structure?

2. [redacted]

a)
```
main( )
{
    struct gospel
   {
```

```
        int num;
        char mess1[50];
        char mess2[50];
    }m;
    m.num = 1;
    strcpy(m.mess1, ”If at all that you have is hammer”);
    strcpy(m.mess2, ”Everything looks like a nail”);
    printf(“\n%u%u%u”, &m.num, m.mess1, m.mess2);
}
```

b)
```
struct gospel
{
    int num;
    char mess1[50];
    char mess2[50];
}m1 = {2, ”If you are driven by success”, ”make sure that it is a quality drive”};
 main( )
 {
    struct gospel m2,m3;
    m2 = m1;
    m3 = m2;
   printf(“\n%d%s%s”, m1.num, m2.mess1, m3.mess2);
 }
```

3. Point out errors, if any, in the following program :

```
main()
{
    struct  employee
    {
```

```
        char name[25];
        int age;
       float bs;
     };
   struct employee e;
  strcpy(e.name,”Hacker”);
  age = 25;
  printf(“\n%s%d”,e.name,age);
}
```

EXPERIMENT No. 14

AIM : Write a program to define a union - contact that will contain the members mobile no. and e-mail id. Now define a structure - employee that will contain name, roll no., mode of contact and a variable of type contact as members. The program will ask the user to give the details of two employees including mode of contact and the contact num/e-mail. Print the details of both the employees.

PROGRAM :

```
#include<stdio.h>
#include<conio.h>
union contact
{
  char mobileno[10];
  char email[15];
 };
struct employee
{
  char name[15];
  int rollno;
  union contact mode_of_contact;
};
void main( )
{
        struct employee emp[2];
```

```
    int mode;

                for(i=0;i<2;i++)
{   printf("Enter the %d employee's details :\n",i+1);
    scanf("%s%d",emp.name[i],&emp.rollno[i]);
    printf("Enter mode of contact :\n");
    printf("Enter 1 for mobile no.\n2 for email\n");
    scanf("%d",&mode);
    if(mode==1)
    {
       printf("Enter Mobile number:");
       scanf("%s",emp.mode_of_contact.mobileno[i]);

    printf("%s\t%d\t%s\n",emp.name,emp.rollno,emp.mode_of_contact.mob
    ileno);
    }
    else
    {
        printf("Enter Email-id:");
        scanf("%s",emp.mode_of_contact.email[i]);

    printf("%s\t%d\t%s\n",emp.name,emp.rollno,emp.mode_of_contact.ema
    ilno);
    }
```

```
            }
        getch( );
    }
```

OUTPUT :

```
Enter the 1 employee's details :
XYZ 101
Enter mode of contact :
Enter 1 for mobile no.\n2 for email
1
Enter Mobile number:9827122222
XYZ         101         9827122222
Enter the 2 employee's details :
ABC 102
Enter mode of contact :
Enter 1 for mobile no.\n2 for email
1
Enter Mobile number:9827144444
ABC         102         9827144444
```

VIVA-VOCE QUESTIONS

1. What is union?

2. Differentiate structure and union?

3. When do we use the following :
   a) Unions.
   b) Bit fields.
   c) The sizeof operator.

EXPERIMENT No. 15

[redacted]

PROGRAM : The existing file is a source file. All the character of a source file are read one by one and written as another file called target file.


```
/* text file copying */

#include<stdio.h>

main( )

{

char ch, source_name[12], target_name[12];

FILE *source_fptr, *target_fptr;

printf("\n Enter the source file name");

scanf("%s", source_name);

source_fptr = fopen(source_name, "r");

if(source_fptr==NULL)

 {

    printf("file not exist");

                exit(1);

}

printf("\n Enter the target file name:");
```

```
                scanf("%s", target_name);
                target_ptr = fopen(target_name, "w+");
                if (target_fptr = =NULL)
                    {
                        printf("\n Insufficient memory !!!");
                        fclose(source_name);
                        printf("\n press any key. . . ");
                        getch( );
                        exit( );
                    }
/* loop to copy the text */
while(! feof(source_fptr))
{
        ch = getc(source_fptr);
        putc(ch, target_fptr);
}
printf("\n The contents of the target file are : ");
printf("\n - - - - - - -");
rewind(target_fptr);
while(!feof(target_fptr))
{
        ch = getc(target_fptr);
        printf("%c", ch);
}
fclose(source_fptr);
fclose("target_fptr");
printf("\n \n press any key. . . ");
}
```

Test Run:

```
        Enter the source file name: SAMPLE.TXT

        Enter the target file name: SAMPLE.BAK

        The contents of the target file are
```

Computer programming in C language is widely used for science and engineering applications.

Press any key

EXPERIMENT No. 16

AIM : Write a program that will take any number of integers from the command line as argument and print the sum of all those integers.

PROGRAM :

```
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
void main(int argc,char* argv[])
{
        int sum=0,i;
        printf("PROGRAM FOR ADDING A LIST OF VALUES USING
                COMMAND LINE  ARGUMENTS\n");
         for(i=1;i<argc;i++)
            sum=sum+atoi(argv[i]);
        printf("Sum : %d",sum);
        getch();
}
```

OUTPUT :

Complie the program and then make executable file of program by pressing f9 key

Then go to command prompt

C:\TURBOC>arg 3 4 5 6 7

PROGRAM FOR ADDING A LIST OF VALUES USING COMMAND LINE ARGUMENTS

Sum : 25

VIVA-VOCE QUESTIONS

1. What do you mean by command line argument?
2. What do the ‘c’ and ‘v’ in argc and argv stand for?
3. According to ANSI specification which is the correct way of declaring main( ), when it receives command line argument?

   a) main(int argc, char *argv[ ])
   b) main(argc, argv)
      int argc; char *argv[ ];

   c)
```
main( )
{
   int argc; char *argv[ ];
}
```

   d) None of the above

4. What would be the output of the following?

```
main(int argc, char **argv)
{
  argc = argc - (argc - 1);
  printf("%s", argv[argc - 1]);
}
```

EXPERIMENT No. 17

AIM : Write a program to process sequential file for payroll data.

PROGRAM :

```
#include<stdio.h>
#include<conio.h>
void main()
{
        struct payroll
        {
              int eid;
              char ename[15];
              int basic;
              float da,hra,tax;
              float gross,net;
        }p;
  char c;
  FILE *fp;
  clrscr();
  fp=fopen("payroll","a");
  printf("Enter Employee Id, Name, Basic Pay:\n");
  while(scanf("%d%s%d",&p.eid,p.ename,&p.basic)!=EOF)
  {
          p.da=p.basic*.25;
```

```
            p.hra=p.basic*.1;
            p.gross=p.basic+p.da+p.hra;
            p.tax=p.gross*.3;
            p.net=p.gross-p.tax;
            fwrite(&p,sizeof(p),1,fp);
    }
    fclose(fp);
    fp=fopen("payroll","r");
    printf("Cotents of file:\n");
    printf("_____\n");
    while(fread(&p,sizeof(p),1,fp))
    {
            printf("\nEmployee Id :%d",p.eid);
            printf("\nEmployee Name :%s",p.ename);
            printf("\nBasic Pay :%d",p.basic);
            printf("\nDearness Allowance :%f",p.da);
            printf("\nHouse Rent Allowance :%f",p.hra);
            printf("\nIncome Tax :%f",p.tax);
            printf("\nNet Salary :%f",p.net);
            printf("\n-----------------------------------------------------------
        \n");
    }
    fclose(fp);
```

```
        getch();
    }
```

INPUT :

```
Enter Employee Id, Name, Basic Pay:
101
Sam
8000
102
Adam
7000
103
Jhon
6000
^Z
```

OUTPUT :

Contents of file:

```
Employee Id :101
Employee Name :Sam
Basic Pay :8000
Dearness Allowance :2000.000000
```

House Rent Allowance :800.000000

Income Tax :3240.000000

Net Salary :7560.000000

Employee Id :102

Employee Name :Adam

Basic Pay :7000

Dearness Allowance :1750.000000

House Rent Allowance :700.000000

Income Tax :2835.000000

Net Salary :6615.000000

Employee Id :103

Employee Name :Jhon

Basic Pay :6000

Dearness Allowance :1500.000000

House Rent Allowance :600.000000

Income Tax :2430.000000

Net Salary :5670.000000

VIVA-VOCE QUESTIONS

1. If a file contains the line “I am a boy\r\0” then on reading this line into array str[] using fgets what would str[] contain:

a) I am a boy\r\n\0
b) I am a boy\r\0
c) I am a boy\n\0
d) I am a boy

2. On opening a file for reading which of the following activities are performed :

a) The disk is searched for existence of the file.
b) The file is brought into the memory
c) A pointer is set up which points to the first character in the file.
d) All the above

3. While using the statement :

fp = fopen(“myfile”,”r”);

what happens if,

a) “myfile .c” does not exist on the disk
b) “myfile.c” exist on the disk

4. Distinguish the following :

a) getc and getchar functions.
b) printf and fprintf functions.
c) feof and ferror functions.