4.6 STATES ERRORS,IF ANY,IN THE FOLLOWING STATEMENTS.

[A] :scanf("%c %f %d",city,&price,&year);
=NO ERROR.

[B] : scanf("%s %d", city,amount);
= THERE WILL BE A & BEFORE AMOUNT.

[C] : scanf("%f %d",&amount,&year);
=NO ERROR.

[D] : scanf(\n"%f", root);
=\N WILL REMAIN INTO DOUBLE QUOTE.

[E] :scanf("%c %d %ld",*code, &count, root);
=* IS NOT ALLOWED BEFORE CODE AND &WILL STAY BEFORE ROOT.

4.7 WHAT WILL BE THE VALUES STORED OF THE VARIABLES YEAR AND CODE WHEN THE DATA 1988,X ?

[A] :scanf("%d %c",&year,&code);
=YEAR STORS 1988 AND CODE STORS X.

[B] :scanf("%c %d",&year,&code);
= YEAR STORS X AND CODE STORS 1988.

[C] :scnaf("%d %c",&code,&year);
=CODE STORS 1988 AND YEAR STORS X.

4.8 COUNT,PRICE,CITY HAVE VALUES:

COUNT=1275,
PRICE=235.74,
CITY=CAMBRIDGE.
WHAT WILL BE THE OUTPUT THE STATEMENT ?

[A] : printf("%d %f",count,price);
OUTPUT=1275 235.75.

[B] :printf("%d %f",price,count);
OUTPUT=36576 790980

[C] :printf("%c",city);
OUTPUT=CAMBRIDGE

4.9 SHOW THE WRONG OF THE OUTPUT STATEMENTS.

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[A] :printf("%d.7.2%f",year,amount);
WRONG=7.2 SHOULD REMAIN AFTER THE %

[B] :printf("%-s,%c"\n,city,code);
WRONG=COMMA IS NOT ALLOWED AND \N SHOULD STAY INTO QUOTATION.

[C] :printf("%f %d %s",price,count,city);
=NO WRONG.

4.10 WHAT VALUES DOSE THE COMPUTER ASSIGN OF THIS INPUT STATEMENTS?

scanf("%4d %*d",&year,&code,&count);
IF DATA KYED IN 19883745
0UTPUT=1988.

4.11 HOW CAN WE USE getcher() FUNCTION TO MULTICHARACTER STRINGS?

= BY INCLUDING SINGLE QUOTATION OVER MULTICHARACTER WE CAN USE getchar() FUNCTION.

4.12 HOW CAN WE USE putchar() FUNCTION TO MULTICHARACTER STRINGS?

= BY INCLUDING SINGLE QUOTATION OVER MULTICHARACTER WE CAN USE putchar() FUNCTION.

4.13 WHAT IS THE PURPOSE OF SCANF() FUNCTION?

=IF WE WANT TO TAKE DATA AFTAR RUNNING THE PROGRAMM THEN
WE USE scanf() FUNCTION.

4.14 DESCRIBE THE PURPOSE OF COMMONLY USED CONVERSION CHARACTERS IN A scanf() FUNCTION ?

=IT INDICATES WHAT TYPES OF DATA WE TAKE AS INPUT.

4.15 WHAT HAPPENS WHEN AN INPUT DATA ITEM CONTAIN ?

[A] MORE CHARACTERS THAN SPECIFIED FIELD WIDTH.
=VALUE WILL BE RIGHT-JUSTIFIED.

[B] FEWER CHARACTER THAN SPECIFIED FIELD WIDTH.
=VALUE WILL BE LEFT-JUSTEFIED.

4.16 WHAT IS THE PURPOSE OF printf() FUNCTION ?

=IT IS USED TO SHOW ANYTHIG ON OUTPUT.

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4.17 DESCRIBE THE PURPOSE OF COMMONLY USED CONVERSION CHARACTERS IN A printf() FUNCTION ?

= IT INDICATES WHAT TYPES OF DATA WE WANT TO SHOW ON OUTPUT.

4.18 WHAT HAPPENS WHEN AN 0UTPUT DATA ITEM CONTAIN ?

[A] MORE CHARACTERS THAN SPECIFIED FIELD WIDTH.
=VALUE WILL BE RIGHT-JUSTIFIED.

[B] FEWER CHARACTER THAN SPECIFIED FIELD WIDTH.
=VALUE WILL BE LEFT-JUSTEFIED.

Problem no. 4.1:Given the string"WORDPROCESSING",

Write a program to read the string from the terminal and

Display the same in the following format:

(a)WORD PROCESSING

(b)WORD

PROCESSING

(c) W.P.

Solution:

```
#include<stdio.h>
void main()
  {
   char s[10],d[11];
   printf("Enter the string:   ");
   scanf("%4s%10s",s,d);
   printf("(a)%s %s\n",s,d);
   printf("(b)%s\n%s\n",s,d);
   printf("(c)%.1s.%.1s",s,d);
}
```


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Output:

```
Enter the string:   WORDPROCESSING
        (a)  WORDPROCESSING
        (b)  WORD
       PROCESSING
(c)  W.P.
```

Problem no. 4.2: Write a program to read the values of x and y and print the results of the following expression in one line:

(a)(x+y)/(x-y) (b)(x+y)/2 (c)(x+y)*(x-y)

Solution:

```
#include<stdio.h>
 void main()
 {
 float x,y,a,b,c;
 printf("Enter the value of x &  y:   ");
 scanf("%f%f",&x,&y);
 if(x-y==0)

 printf("(a)=imagine");
 else
 {
 a=(x+y)/(x-y);
 printf("(a)=%.2f",a);
 }
 b=(x+y)/2;
 c=(x+y)*(x-y);
 printf("  (b)=%.2f  (c)=%.2f",b,c);
 }
```

Output:

```
Enter the value of x &  y:  4   3
(a)=7.00
(b)=3.50
(c)=12.00
Enter the value of x &  y:  7   7
(a)= imagine
(b)=7.00
(c)=0.00
```


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Problem no. 4.3: Write a program to read the following numbers, round them off to the nearest integers and print out the results in integer form:
35.7 50.21 -23.73 -46.45

Solution:

```
#include<stdio.h>
void main()
  {
  int p,i;
  float a;
  printf("enter  real number  for get nearest integer number\n");
     for(i=1;i<=4;i++)
     {
     scanf("%f",&a);
     if(a>=0)
         p=a+0.5;
     else
         p=a-0.5;
          printf("\nnearest integer number of  %f is= %d\n",a,(int)p);
     }

  }
```

Output:

```
enter  real number  for get nearest integer number  35.7
nearest integer number of  35.7 is= 36
enter  real number  for get nearest integer number 50.21
nearest integer number of  50.21 is=50
enter  real number  for get nearest integer number  -23.73
nearest integer number of   -23.73 is=   -24
enter  real number  for get nearest integer number -46.45
nearest integer number of  -46.45 is=   -46
```

Problem no. 4.4:write a program that read 4 floating values in the range, 0.0 to20.0, and prints a horizontal bar chart to represent these values using the character * as the fill character. For the purpose of the chart, the values may be rounded off to the nearest integer . For the example , the value 4.36 should be represented as follos,

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

4.36

Solution:

```
#include<stdio.h>
 void main()
 {
   float a1,a2,a3,a4;
   int x,y,z,t,i;
   printf("Enter four float number:");
   scanf("%f%f%f%f",&a1,&a2,&a3,&a4);
x=a1+0.5;
y=a2+0.5;
z=a3+0.5;
t=a4+0.5;
   printf("The horizontal bar chard is:\n");
   for(i=0;i<x;i++)
   printf("*  ");
   printf("%.2f\n",a1);
   for(i=0;i<y;i++)
   printf("*  ");
   printf("%.2f\n",a2);
   for(i=0;i<z;i++)
   printf("*  ");
   printf("%.2f\n",a3);
   for(i=0;i<t;i++)
   printf("*  ");
   printf("%.2f\n",a4);
  }
```

Output:

```
Enter four float number:  4.85   4.36   3.12   5.47
The horizontal bar chard is:
*  *  *  *  *  4.85
*  *  *  *  4.36
*  *  *  3.12
*  *  *  *  *  5.47
```


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Problem no.4.5: Write a program to demonstrate the process of multiplication. The program should ask the user to enter two two digit integer and print the product of integers as shown bellow.

```
                    45
                X   37
          7x45 is  315
          3x45is   135
Add them          1665
```

Solution:

```
#include<stdio.h>
void main()
   {
   int a,b,c,p;
   printf("Enter 2  two digits number:");
   scanf("%d%d",&a,&b);
   printf(" \t%4d\n\tx%3d\n",a,b);
   printf("\t------\n");
   p=b/10;
   c=b%10;
   printf("%dx%dis%6d\n",c,a,c*a);
   printf("%dx%dis%5d\n",p,a,p*a);
   printf("\t-------\n");
   printf("Add them %d\n",a*b);
   printf("\t-------");

   }
```

Output:

```
                    45
                X   37
          7x45 is  315
          3x45is   135
Add them          1665
```

Problem no.4.6: Write a program to read three integers from the keyboard using one scanf statement and output them on one line using:
(a)three printf statements,
(b)only one printf with conversion specifiers and
(c) only one printf without conversion specifiers.

Solution:

```
#include<stdio.h>
void main()
  {
     int x,y,z;
    printf("Enter three integer value of x,y,&z:");
    scanf("%d%d%d",&x,&y,&z);
    printf("(a)  X=%d,",x);
    printf("Y=%d,",y);
    printf("Z=%d\n",z);
    printf("(b) X=%3d, Y=%2d, Z=%2d\n",x,y,z);
    printf("(c) X= %d, Y=%d, Z=
    %d",x,y,z);
 }
```

Output:

```
Enter three integer value of x,y,&z:  45   27   89
(a)   X=45,   Y=27,   Z=89
(b)   X=45,   Y=27,   Z=89
(c)   X=45,   Y=27,   Z=89
```

Problem no.4.7: Write a program that prints the value 10.45678 in exponential format with the following specifications:
(a)correct to two decimal place,
(b)correct to four decimal place and
(c)correct to eight decimal place.

Solution:

```
#include <stdio.h>
main(void)
  {
  float a=10.45678,x,y,z;
  printf("%8.2e\n%10.4e\n%10.8e",a,a,a);
  return 0;
  }
```

Output:

```
  1.04e+01
  1.0456e+01
  1.04567804e+0
```


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Problem no.4.8 Write a program to print the value 345.6789 in fixed-point format with the following specifications:
(a)correct to two decimal place,
(b)correct to four decimal place and
(c)correct to zero decimal place.

Solution:

```
#include <stdio.h>
void main()
  {
  float a=345.6789;
  printf("The two decimal place is: %.2f\n",a);
  printf("The five decimal place is: %.5f\n",a);
  printf("The zero decimal place is: %.0f",a);
  }
```

Output:

```
The two decimal place is: 345.67
The five decimal place is: 345.67889
The two decimal place is: 345
```

Problem no.4.9: Write a program to read the name ANIL KUMAR GUPTA in three parts using the scanf statement and to display the same in the following format using the printf statement.

(a) ANIL K. GUPTA
(b) A. K. GUPTA
(c) GUPTA A. K.

Solution:

```
#include<stdio.h>
void main()
  {
   char s[6],d[6],c[6];
   printf("Enter the string:");
   scanf("%5s%5s%5s",s,d,c);
   printf("(a)  %s %.1s. %s\n",s,d,c);
   printf("(b)  %.1s.%.1s.%s\n",s,d,c);
   printf("(c)  %s %.1s.%.1s.\n",c,s,d);
  }
```

Output:

Enter the string: ANIL KUMAR GUPTA
(a) ANIL K. GUPTA
(b) A. K. GUPTA
(d) GUPTA A. K.

Problem no.4.10: Write a program to read and disply the following table of data

Name Code Price
Fan 67831 1234.50
Motor 450 5786.70
The name and code must be left-justified and price must be right-justified .

Solution:

```
#include<stdio.h>
void main()
   {
   int code1,code2;
   float price1,price2;
   char name1[10],name2[10];
   printf("Enter first name ,code and price :");
   scanf("%s%d%f",name1,&code1,&price1);
   printf("Enter second name ,code and price :");
   scanf("%s%d%f",name2,&code2,&price2);
   printf("Name\tCode\tPrice\n");
   printf("%-s\t%-d\t%.2f\n",name1,code1,price1);
   printf("%-s\t%-d\t%.2f\n",name2,code2,price2);

   }
```

Output:

```
Enter first name ,code and price :  Fan          67831        1234.50
Enter second name ,code and price :  Motor       450          5786.70

 Name        Code        Price
Fan         67831       1234.50
Motor       450         5786.70
```


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Assignments:

1. Write the working procedure of the following function with details.
   scanf();
   printf();
   getchar();
   putchar();