13. (b) Test 13

Test Summary

- No. of Sections: 2
- No. of Questions: 3
- Total Duration: 45 min

Section 1 - Coding Proficiency

Section Summary

- No. of Questions: 2
- Duration: 30 min

Additional Instructions:

None

Q1. **Pattern**

Given an integer N, print N lines in the following manner -

For e.g. if N=6:

1111112
3222222
3333334
5444444
5555556
7666666
and so on.
The input to the method patternPrint of class NumberPattern shall consist of an integerN (Assume 1<N <100) representing the number of lines to be printed.Do not return anything from the method.

Input Format

Input contains n

Output Format

print the pattern

Constraints

1<= n <= 50

Sample Input

```
4
```

Sample Output

```
11112
32222
33334
54444
```

Time Limit: - ms Memory Limit: - kb Code Size: - kb

Q2. **Pattern**

Given an integer N. print N lines in the following manner –

If N = 4
the pattern generated would be –
1*2*3*4*17*18*19*20
—5*6*7*14*13*16
-- -----8*9*12*1 3
----------10*11
The input to the function trapeziumPatternPrint shall consist of an integer N (Assume O<= N <= 100).
Do not return anything from the function. Print the required pattern using cout
Each line of the output shall consist of 'numerals'. '" and '-' only There should be no spaces.
Useful Commands: •
cout prints the content to the screen.

Input Format

Input contains n

Output Format

Print the pattern

Constraints

1 <= n <= 50

Sample Input

```
4
```

Sample Output

```
1*2*3*4*17*18*19*20
---5*6*7*14*15*16
------8*9*12*13
          10*11
```

Time Limit: - ms Memory Limit: - kb Code Size: - kb

Section 2 - Essay Writing

Section Summary

- No. of Questions: 1
- Duration: 15 min

Additional Instructions:

None

Q1. **Essay Writing**

Pollution and explain one type of pollution with an example and give some suggestions

Directions

Write an essay for the given question

Keywords

Answer Key & Solution

Section 1 - Coding Proficiency

Q1

Test Case

Input

```
7
```

Output

```
11111112
32222222
33333334
54444444
```

Weightage - 20

Input

```
9
```

Output

```
1111111112
3222222222
3333333334
5444444444
```

Weightage - 20

Input

```
8
```

Output

```
111111112
322222222
333333334
544444444
```

Weightage - 20

Input

```
6
```

Output

```
1111112
3222222
3333334
5444444
```

Weightage - 10

Input

```
1
```

Output

```
12
```

Weightage - 10

Input

```
2
```

Output

```
112
322
```

Weightage - 10

Input

```
3
```

Output

```
1112
3222
3334
```

Weightage - 10

Sample Input

```
4
```

Sample Output

```
11112
32222
33334
54444
```

Solution

Header

```
#include<stdio.h>



void patternPrint(int n)
{
int col,row;
for(row =1 ; row <= n ; row++)
    {
        if(row % 2 == 0)
             printf("%d",row+1);
    for( col = 1 ; col <= n ; col++)
        printf("%d",row);
     if(row % 2 ==1)
        printf("%d ",row+1);
        printf("\n");
    }
}
```

Footer

```
int main()
{
    int inp;
    scanf("%d",&inp);
    patternPrint(inp);
}
```

Header

```
#include<stdio.h>
class NumberPattern
{
  public :
  void patternPrint(int);
};


void NumberPattern::patternPrint(int n)
{
int col,row;
for(row =1 ; row <= n ; row++)
    {
        if(row % 2 == 0)
             printf("%d ",row+1);
    for( col = 1 ; col <= n ; col++)
        printf("%d ",row);
     if(row % 2 ==1)
        printf("%d ",row+1);
        if(row < n)printf("\n");
    }
}
```

Footer

```
int main()
{
    int inp;
    scanf("%d",&inp);
    NumberPattern np;
    np.patternPrint(inp);
}
```

Q2

Test Case

Input

```
5
```

Output

```
1*2*3*4*5*26*27*28*29*30
---6*7*8*9*22*23*24*25
------10*11*12*19*20*21
         13*14*17*18
```

Weightage - 10

Input

```
7
```

Output

```
1*2*3*4*5*6*7*50*51*52*53*54*55*56
---8*9*10*11*12*13*44*45*46*47*48*49
------14*15*16*17*18*39*40*41*42*43
         19*20*21*22*35*36*37*38
```

Weightage - 10

Input

```
9
```

Output

```
1*2*3*4*5*6*7*8*9*82*83*84*85*86*87*88*89*90
---10*11*12*13*14*15*16*17*74*75*76*77*78*79*80*81
------18*19*20*21*22*23*24*67*68*69*70*71*72*73
         25*26*27*28*29*30*61*62*63*64*65*66
```

Weightage - 10

Input

```
12
```

Output

```
1*2*3*4*5*6*7*8*9*10*11*12*145*146*147*148*149*150*
---13*14*15*16*17*18*19*20*21*22*23*134*135*136*137
------24*25*26*27*28*29*30*31*32*33*124*125*126*127
```

Weightage - 10

Input

```
18
```

Output

```
1*2*3*4*5*6*7*8*9*10*11*12*13*14*15*16*17*18*325*32
---19*20*21*22*23*24*25*26*27*28*29*30*31*32*33*34*
------36*37*38*39*40*41*42*43*44*45*46*47*48*49*50*
```

Weightage - 10

Input

```
2
```

Output

```
1*2*5*6
---3*4
```

Weightage - 5

Input

```
3
```

Output

```
1*2*3*10*11*12
---4*5*8*9
------6*7
```

Weightage - 5

Input

```
6
```

Output

```
1*2*3*4*5*6*37*38*39*40*41*42
---7*8*9*10*11*32*33*34*35*36
------12*13*14*15*28*29*30*31
         16*17*18*25*26*27
```

Weightage - 10

Input

```
8
```

Output

```
1*2*3*4*5*6*7*8*65*66*67*68*69*70*71*72
---9*10*11*12*13*14*15*58*59*60*61*62*63*64
------16*17*18*19*20*21*52*53*54*55*56*57
          22*23*24*25*26*47*48*49*50*51
```

Weightage - 10

Input

```
10
```

Output

```
1*2*3*4*5*6*7*8*9*10*101*102*103*104*105*106*107*10
---11*12*13*14*15*16*17*18*19*92*93*94*95*96*97*98*
------20*21*22*23*24*25*26*27*84*85*86*87*88*89*90*
```

Weightage - 10

Input

```
11
```

Output

```
1*2*3*4*5*6*7*8*9*10*11*122*123*124*125*126*127*128
---12*13*14*15*16*17*18*19*20*21*112*113*114*115*11
------22*23*24*25*26*27*28*29*30*103*104*105*106*10
```

Weightage - 10

Sample Input

```
4
```

Sample Output

```
1*2*3*4*17*18*19*20
---5*6*7*14*15*16
------8*9*12*13
          10*11
```

Solution

Header

```
#include<stdio.h>


void trapeziumPatternPrint( int n)
{
    int row, col,start1=1, start = 1, space = 0;
 for(row = n ; row >= 1 ; row--, printf("\n"), space+=3)
{
    for(col=1 ; col<=space ; col++)
        printf("-");

    for(col = 1 ; col <=row ; col++)
              printf("%d*",start++);

    for(col = 1 ; col <=row ; col++)
       if(col == row )
     printf("%d",(row*row)+start1++);
        else
           printf("%d*",(row*row)+start1++);
}
}
```

Footer

```
int main()
{
int n;
```

```
int n;
scanf("%d",&n);
trapeziumPatternPrint(n);


return 0;
}
```

Header

```
#include<stdio.h>



void trapeziumPatternPrint( int n)
{
    int row, col,start1=1, start = 1, space = 0;
 for(row = n ; row >= 1 ; row--, printf("\n"), space+=3)
{
    for(col=1 ; col<=space ; col++)
        printf("-");
    for(col = 1 ; col <=row ; col++)
              printf("%d*",start++);

    for(col = 1 ; col <=row ; col++)
       if(col == row )
     printf("%d",(row*row)+start1++);
        else
           printf("%d*",(row*row)+start1++);
}
}
```

Footer

```
int main()
{
int n;
scanf("%d",&n);
trapeziumPatternPrint(n);

return 0;
}
```

Section 2 - Essay Writing

Q1 Sample Essay

No Essay

Keywords

pollution, type, nature, affect, control,