PYTHON WORKSHEET

1. Which of the following will raise a value error in python?

Answer→ int(-3.2)

2. What will be the output of round(3.567)?

Answer→ C) 4

3. How is the function pow(a,b,c) evaluated in python?

Answer→ B) (a**b)%c

4. What will be the output of print(type(type(int))) in python 3?

Answer→ A) <class ‘type’>

5. What will be the output of ord(chr(65))?

Answer→ C) 65

6. What is called when a function is defined inside a class?

Answer→ D) Method

7. What will be the output of all([1, 0, 5 ,7])?

Answer→B) False

8. Is the output of the function abs() the same as that of the function math.fabs()?

Answer→ B) Sometimes

9. Select all correct float numbers in python?

Answer→A) -68.7e100

C) 4.2038

D) 3.0

10. Which of the following is(are) correct statement(s) in python?

Answer→ B) You can pass keyword arguments in any order.

C) You can call a function with positional and keyword arguments.

D) Positional arguments must be before keyword arguments in a function call

11. Write a python function print pyramid of stars. Level of the pyramid should be taken as an input from the

user. E.g.

Input = 5

Output:

In [22]:

```
print("Enter Number of Rows: ")
row = int(input())
print("Star Pyramid of " + str(row) + " Rows or Lines: ")
for i in range(row):
    for s in range(row, i, -1):
        print(end=" ")
    for j in range(i+1):
        print(end="* ")
    print()
```

```
Enter Number of Rows:
5
Star Pyramid of 5 Rows or Lines:
    *
   * *
  * * *
 * * * *
* * * * *
```

12. Write a python function print Hourglass pattern.

E.g.

Input = 5

Output:

In [23]:

```python
# Hourglass pattern in Python

# Reading number of rows
row = int(input("Enter number of rows: "))

print("Generated Hourglass Pattern is: ")
# Upper-half
for i in range(row, 0, -1):
    for j in range(row-i):
        print(" ", end="")
    for j in range(1, 2*i):
        print("*", end="")
    print()

# Lower-half
for i in range(2, row+1):
    for j in range(row-i):
        print(" ", end="")
    for j in range(1, 2*i):
        print("*", end="")
    print()
```

```
Enter number of rows: 5
Generated Hourglass Pattern is:
*********
 *******
  *****
   ***
    *
   ***
  *****
 *******
*********
```

13. Write a python function to print Pascal's Triangle. The number of levels in the triangle must be taken as input

by the user. E.g.

Input = 5

Output:

In [9]:

```python
def print_pascal_triangle(size):
    for i in range(0, size):
        for j in range(0, i + 1):
            print(decide_number(i, j), end=" ")
        print()


def decide_number(n, k):
    num = 1
    if k > n - k:
        k = n - k
    for i in range(0, k):
        num = num * (n - i)
        num = num // (i + 1)
    return num

# set rows
rows = 5
print_pascal_triangle(rows)
```

```
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
```

In [24]:

```
import math

print(end="Enter the Value of n: ")
n = int(input())
for i in range(n):
  for col in range(n-1, i, -1):
    print(end=" ")
  for col in range(i+1):
    val = int(math.factorial(i)/(math.factorial(col)*math.factorial(i-col)))
    print(val, end=" ")
  print()
```

```
Enter the Value of n: 5
    1
   1 1
  1 2 1
 1 3 3 1
1 4 6 4 1
```

14. Write a python function to print Diamond Shaped Pattern shown below. Function must take integer input which represents the number of stars in the middle most line. E.g.:

Input = 5

Output:

In [25]:

```
h = int(input("please enter diamond's height:"))

for i in range(h):
    print(" "*(h-i), "*"*(i*2+1))
for i in range(h-2, -1, -1):
    print(" "*(h-i), "*"*(i*2+1))
```

```
please enter diamond's height:5
      *
     ***
    *****
   *******
  *********
   *******
    *****
     ***
      *
```

15. Write a python function to print Diamond Shaped Character Pattern shown below. Function must take integer input within range 1 to 26, which represents the rank of the alphabet. E.g.:

Input = 5

Output

In [10]:

```python
# diamond alphabet pattern program
n = 5

# Upper triangle shape
for i in range(n):
    for j in range(n - i - 1):
        print(' ', end='')
    for j in range(2 * i + 1):
        print(chr(65 + j), end='')
    print()

# Lower triangle shape
for i in range(n - 1):
    for j in range(i + 1):
        print(' ', end='')
    for j in range(2*(n - i - 1) - 1):
        print(chr(65 + j), end='')
    print()
```

```
    A
   ABC
  ABCDE
 ABCDEFG
ABCDEFGHI
 ABCDEFG
  ABCDE
   ABC
    A
```