PYTHON WORKSHEET 3

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

   A) int(32)
   B) int(3.2)
   C) int(-3.2)
   D) int('32')

   Ans: For the above given options none will raise value error as int data type always accepts integer value. It will raise exception when alphabets or special character is used.

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

   A) 3.5
   B) 3.0
   C) 4
   D) 3

   Ans: C) 4

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

   A) a**b**c
   B) (a**b)%c
   C) (a**b)*c
   D) (a**b)**c

   Ans: B) (ab)%c**

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

   A) <class 'type'>
   B) <type 'type'>
   C) <class 'int'>
   D) <type 'int'>

   Ans: A) <class 'type'>

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

A) ‘A’
B) ‘a’
C) 65
D) TypeError

Ans: C) 65

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

A) Module
B) Function
C) _init_ function
D) Method

Ans: D) Method

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

A) 0
B) False
C) True
D) error

Ans: B) False

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

A) Always
B) Sometimes
C) Never
D) None of these

Ans: B) Sometimes

9. Select all correct float numbers in python?

A) -68.7e100
B) 42e3
C) 4.2038
D) 3.0

Ans: A) -68.7e100
B) 42e3
C) 4.2038
D) 3.0

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

A) You can pass positional arguments in any order.
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

Ans: 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

```
# python program to print pyramid of stars

def pyramid(s):
    for i in range(1, s + 1):
        print(" " * (s - i) +"* " * i)
s= int(input("Enter s = "))
pyramid(s)
```

 # Output: Enter s = 5

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

Q11. 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

In [14]:

```
# python program to print pyramid of stars


def pyramid(s):
    for i in range(1, s + 1):
        print(" " * (s - i) +"* " * i)

s= int(input("Enter s = "))
pyramid(s)
```

```
Enter s = 5
    *
   * *
  * * *
 * * * *
* * * * *
```

12. Write a python function print Hourglass pattern E.g Input = 5

```
# Program for hour glass pattern

def hourglass(s):
    character = "*"
    s = 5
    pattern = int(s)

    for i in range(pattern):
        print(" "*i + character*(2*(pattern-i)-1))
    for j in range(pattern-1, 0, -1):
        print(" "*(j-1) + character*(2*(pattern-j) + 1))
s = int(input("Enter s = "))
print("\r")
hourglass(s)
```

 # Output: Enter s = 5

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

Q12. Write a python function print Hourglass pattern E.g Input = 5

In [24]:

```
# Program for hour glass pattern

def hourglass(s):
    character = "*"
    s = 5
    pattern = int(s)

    for i in range(pattern):
        print(" "*i + character*(2*(pattern-i)-1))
    for j in range(pattern-1, 0, -1):
        print(" "*(j-1) + character*(2*(pattern-j) + 1))
s = int(input("Enter s = "))
print("\r")
hourglass(s)
```

```
Enter s = 5

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

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

```
# Pascal's Triangle in Python

def pascal(s):
    for i in range(s):
        print("*(s-i), end=' ')
        print(' '.join(map(str, str(11**i)))) # Computing power of 11
s = int(input("Enter s = "))
print("\r")
pascal(s)
```

 # Output: Enter s = 5

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

Q13. 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

In [36]:

```
# Pascal's Triangle in Python

def pascal(s):
    for i in range(s):
        print(''*(s-i), end=' ')
        print(' '.join(map(str, str(11**i)))) # Computing power of 11
s = int(input("Enter s = "))
print("\r")
pascal(s)
```

```
Enter s = 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

```
def diamond(s):
    for i in range(1, s + 1):
        print(" " * (s - i) +"* " * i)

    for i in range(s-1,0,-1):
        print(" " * (s - i) +"* " *i)
s= int(input("Enter s = "))
print("\r")
diamond(s)
```

 # Output: Enter s = 5

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

Q14. 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

In [97]:

```
def diamond(s):
    for i in range(1, s + 1):
        print(" " * (s - i) +"* " * i)

    for i in range(s-1,0,-1):
        print(" " * (s - i) +"* " *i)
s= int(input("Enter s = "))
print("\r")
diamond(s)
```

```
Enter s = 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

```
alpha = "A B C D E"
val = 1
n = 2
for line in range(len(alpha)):
    if val == len(alpha):
        n *= -1
    space = " " * (len(alpha) - val//2)
    print(space + alpha[0:val])
    val += n
```

 # Output:

```
    A
   A B
  A B C
 A B C D
A B C D E
 A B C D
  A B C
   A B
    A
```

Q15. 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

In [3]:

```
alpha = "A B C D E"
val = 1
n = 2
for line in range(len(alpha)):
    if val == len(alpha):
        n *= -1
    space = " " * (len(alpha) - val//2)
    print(space + alpha[0:val])
    val += n
```

```
    A
   A B
  A B C
 A B C D
A B C D E
 A B C D
  A B C
   A B
    A
```