WORKSHEET 3

PYTHON Q1 to Q8 have only one correct answer. Choose the correct option to answer your question.

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: D) int('32')

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) (a**b)%c

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

Ans: `<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

Explanation: math.fabs() always returns a float and does not work with complex numbers whereas the return type of abs() is determined by the type of value that is passed to it.

Q9 and Q10 have multiple correct answers. Choose all the correct options to answer your question.

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.

B) You can pass keyword arguments in any order.
the language has the ability to collect both positional and/or keyword arguments in a single call. D) Positional arguments must be before keyword arguments in a function call

Q11 to Q15 are programming questions. Answer them in Jupyter Notebook.
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 :

```
def typeTriangle(n):

    #number of spaces
    k = n - 1

    #outer Loop to handel number of rows
    for i in range(0,n):
```

```
    #inner loop to handel number of spaces values changes according to
requirement
    for j in range(0, k):
        print(end = " ")

    #discrminating k aftereach loop
    k=k-1

    #inner loop to handel number of columns
    #values changing according to outer loop
    for j in range(0,i+1):

        #printing stars
        print("* ",end="")

    #ending line after each row
    print("\r")
#Driven code
n=5
typeTriangle(n)
```

```
Output

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

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

Ans: # 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: 6
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

1

11

1 2 1

1 3 3 1

1 4 6 4 1

Ans:

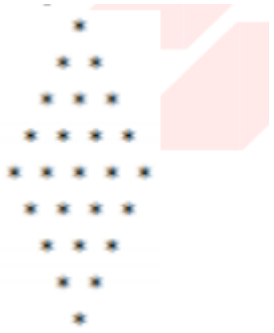
13. Write a python function to print Pascal's Triangle. The number of levels in the triangle must be taken as input by the user. E.g. Input = 5

Ans:

```
def solve(n):
    for i in range(n+1):
        for j in range(n-1):
            print(" ",end='')
        C =1
        for j in range(1,i+1):
            print(C,' ',sep='',end='')
            C = C * (i - j) // j
        print()
n=5
solve(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:



Ans:

```
# Python program to
# print Diamond shape

# Function to print
# Diamond shape
def Diamond(rows):
    n = 0
    for i in range(1, rows + 1):
        # loop to print spaces
        for j in range (1, (rows - i) + 1):
            print(end = " ")

        # loop to print star
        while n != (2 * i - 1):
            print("*", end = "")
            n = n + 1
        n = 0

        # line break
        print()

    k = 1
    n = 1
    for i in range(1, rows):
        # loop to print spaces
        for j in range (1, k + 1):
            print(end = " ")
        k = k + 1

        # loop to print star
```

```
        while n <= (2 * (rows - i) - 1):
            print("*", end = "")
            n = n + 1
        n = 1
        print()


# Driver Code
# number of rows input
rows = 5
Diamond(rows)
```

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

```
    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
```

Ans: