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: int('32')

2. What will be the output of round(3.567)?
A) 3.5 B) 3.0
C) 4 D) 3

ANS: 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: (a**b)%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: <class 'type'>

5. What will be the output of **ord(chr(65))**?
A) 'A' B) 'a'
C) 65 D) TypeError

ANS: 65

6. What is called when a function is defined inside a class?
A) Module B) Function
C) _init_ function D) Method

ANS: Method

7. What will be the output of **all([1, 0, 5 ,7])**?
A) 0 B) False
C) True D) error

ANS: 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: Always

Note: Both abs() and math.fabs() will return the absolute value of a number, but the main difference is : math.fabs() will return floating point number even if the given number is an integer

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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: **B,C,D**

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*: C,D**

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:

```
# python function print pyramid of stars. Level of the pyramid should be taken as an input from the user. E.g.Input = 5
#Take input from user
n=int(input("Enter the no of rows:"))
for i in range(n):  //for loop for no of rows
    for j in range(n-i-1):   // for loop for columns(space)
        print(" ",end="")
    for j in range(i+1):    //for loop for columns(to print *)
        print("*",end=" ")
    print()
```

OUTPUT:

```
Enter the no of rows:7
      *
     * *
    * * *
   * * * *
  * * * * *
 * * * * * *
* * * * * * *
```

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

Output:

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

```
#Python function print Hourglass pattern
r=int(input("Enter number of rows: "))
print("------------Generated Hourglass Pattern for",r,"rows is-----------------")
# Upper half code
for i in range(r, 0, -1):
    for j in range(r-i):
        print(" ", end="")
    for j in range(1, 2*i):
        print("*", end="")
    print()
# Lower half code
for i in range(2, r+1):
    for j in range(r-i):
        print(" ", end="")
    for j in range(1, 2*i):
        print("*", end="")
    print()
print("The End")
```

OUTPUT:

```
Enter number of rows: 5
------------Generated Hourglass Pattern for 5 rows is-----------------
*******
 *****
  ***
   *
  ***
 *****
*******
The End
```

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

#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

```
from math import factorial

r=int(input("Enter the number of rows:"))
for i in range(r):
    for j in range(r-i+1):
        print(end=" ")
    for j in range(i+1):
        print(factorial(i)//(factorial(j)*factorial(i-j)), end=" ")  #using nCr formula

    print()  #print new line
print("-----------------The End-----------------------")
```

OUTPUT:

```
Enter the number of rows:5
      1
     1 1
    1 2 1
   1 3 3 1
  1 4 6 4 1
-----------------The End-----------------------
```

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:

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

#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

```
#Take user inoput
r=int(input('Enter number of rows: '))

# Upper part of diamond
for i in range(1, r+1):
    for j in range(1,r-i+1):
        print(" ", end="")
    for j in range(1, 2*i):
        print("*", end="")
    print()
```

```
# Lower part of diamond
for i in range(r-1,0, -1):
    for j in range(1,r-i+1):
        print(" ", end="")
    for j in range(1, 2*i):
        print("*", end="")
    print()
print("----------------------------The End-----------------------")
```

OUTPUT

```
Enter number of rows: 5
    *
   ***
  *****
 *******
*********
 *******
  *****
   ***
    *
----------------------------The End-----------------------
```