ĐỀ SỐ 2

1. Which of the following statements is true?
    A. Python is an interpreted language.
    B. Python is a high-level programming language.
    C. Python is an object-oriented language.
    D. All of the above.
    E. None of the above

2. What is output of:

    ```python
    >>> print(r'foo\\bar\nbaz')
    ```

    A. foo\bar
        baz
    B. foo\\barnbaz
    C. foo\bar\nbaz
    D. foo\\bar\nbaz
    E. None of the above

3. In the Python statement x = a + 5 - b:
    *   a and b are _____
    *   a + 5 - b is _____

    A. operators, a statement
    B. operands, an expression
    C. operands, an equation
    D. terms, a group
    E. operators, an expression

4. Suppose s is assigned as follows:

    ```python
    s = 'foobar'
    ```

    All of the following expressions produce the same result except one. Which one?

    A. s[::5]
    B. s[0] + s[-1]
    C. s[::-1][::-5]
    D. s[::-1][-1] + s[len(s)-1]
    E. s[::-5]

5. What is the output of the following code?

```Python
if 'bar' in {'foo': 1, 'bar': 2, 'baz': 3}:
    print(1)
    print(2)
    if 'a' in 'qux':
        print(3)
print(4)
```

A.   4

B.   1
        2
        4

C.   1
        2
        3
        4

D.   1

E. It doesn't generate any output.

6. What is the output of the following code?

```
class Point:
    def __init__(self, x = 0, y = 0):
        self.x = x+1
        self.y = y+1

p1 = Point()
print(p1.x, p1.y)
```

A. 0 0

B. 1 1

C. 2 2

D. x y

E. None None

7. What is the output of the following program?

```
def Foo(x):
  if (x==1):
    return 1
  else:
    return x+Foo(x-1)

print(Foo(4))
```

A. 1   B. 7   C. 10   D. 24   E. Syntax Error

8. Which of the following operators has the lowest precedence?
   A. **
   B. +
   C. and
   D. %
   E. not

9. What is the output of the following code?

```python
class Test:
    def __init__(self, s):
        self.s = s

    def print(self):
        print(s)

a = Test("Python Class")
a.print()
```

   A. The program gives an error because there is no constructor for class Test.
   B. Signature for the print method is incorrect, so an error is thrown.
   C. Python class
   D. The above code will execute correctly on changing print(s) to print(self.s).
   E. The program executed with errors

10. What will be the output of the following code?

```python
def main():
    myCounter = Counter()
    num = 0

    for i in range(0, 100):
        increment(myCounter, num)

    print("myCounter.counter =", myCounter.counter, ", number of times =", num)

def increment(c, num):
    c.counter += 1
    num += 1

class Counter:
    def __init__(self):
        self.counter = 0

main()
```

   A. counter is 101, number of times is 0
   B. counter is 100, number of times is 0
   C. counter is 100, number of times is 100
   D. counter is 101, number of times is 101
   E. counter is 0, number of times is 0

11. What gets printed?

```python
counter = 1

def doLotsOfStuff():

    global counter

    for i in (1, 2, 3):
        counter += 1

doLotsOfStuff()

print(counter)
```

A. 4
B. 3
C. 2
D. 1
E. 7

12. Which numbers are printed?

```python
for i in range(2):
    print(i)

for i in range(4,6):
    print(i)
```

A. 2, 4, 6
B. 0, 1, 2, 4, 5, 6
C. 0, 1, 4, 5
D. 0, 1, 4, 5, 6, 7, 8, 9
E. 1, 2, 4, 5, 6

13. Consider the following code,

```python
confusion = {}
confusion[1] = 1
confusion['1'] = 2
confusion[1] += 1

sum = 0
for k in confusion:
    sum += confusion[k]

print(sum)
```

What is the output?

A. 1
B. 2
C. 3
D. 4
E. 5

14. What will be the output of the following Python code snippet if x = 1?

```
x<<2
```

A. 4
B. 2
C. 1
D. 8
E. 10

15. What is the output of the code below:

```
import numpy as np

ary = np.array([1,2,3,5,8])

ary = ary + 1

print (ary[1])
```

A. 3
B. 4
C. 5
D. 1
E. 2

16. Which of the following expressions results in an error?
A. int(1011)
B. int('1011',23)
C. int(1011,2)
D. int('1011')
E. None of the above

17. What is the output of the following Python code?

```
tinytuple = (123, 'techbeamers')
print tinytuple * 2
```

A. (123, 'techbeamers', 123, 'techbeamers')
B. (123, 'techbeamers') * 2
C. (123, 123)
D. ('techbeamers', 'techbeamers')
E. None of the above

18. Which of the following function checks that all characters of a string are in upper case?
A. join(seq)
B. en(string)
C. isupper()
D. ljust(width[, fillchar])
E. None of the above

19. What is the output of the following code:

```
aList = [1,2]
bList = [3,4]

kvps = { '1' : aList, '2' : bList }
theCopy = kvps.copy()

kvps['1'][0] = 5

sum = kvps['1'][0] + theCopy['1'][0]
print(sum)
```

A. 1

B. 2

C. 6

D. 10

E. An exception is thrown

20. What is the output of the following program?

```
def outerFunction():
    global a
    a = 20
    def innerFunction():
        global a
        a = 30
        print('a =', a)
a = 10
outerFunction()
print('a =', a)
```

A. a = 10

B. a = 20

C. a = 30

D. a = 10 a = 30

E. None of the above