	Cairo University **Faculty of Graduate Studies for Statistical Researches**			
	Department: Computer Sciences			
	Academic Year: 2020-2021		**Semester:** Second	
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Course Title:	**Course code:** CS522	**Time:** 1.5 Hours	**Exam marks:** 100	**# Exam. Sheets:** 11 Pages
Exam. Instructions : <u>ANSWER THE FOLLOWING QUESTIONS in Python</u>				**Model: A**

Question: (30 Mark)

Choose the correct answer for each of the following:

1. Which of the following **assign** an **integer** value to a **variable** correctly?

    (a) x=25   *(b)* x='hello'   *(c)* 2x=5   *(d)* 2x='hello'

2. Which of the following is a **loop without body**?

    (a) x=3
while(x>3)

    (b) x=3
while(x>3);

    (c) x=3
while(x>3)
X=x+1

    (d) x=3
while(x>3):
    pass

3. Which of the following is a correct **comment** in python?

    (a) #comment

    (b) '''comment

    (c) ?comment

    (d) /*comment*/

4. What is the index number of the **last element** of a **tuple** with **30 elements**?

    (a) 30   *(b)* 29   *(c)* -1   *(d)* b and c

5. The **break** statement can be used to **exit** from

    (a) for loop   *(b)* while loop   *(c)* if statement   *(d)* a and b

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6. The last printed expression is assigned to the .... variable

    (a) last   *(b)* _   *(c)* var   *(d)* exp

---

7. What is the **output** of the following:

```
t1=(2, 3, 4)
t2='a', 'b', 'c'
print(t1+t2)
```

    (a) 2 3 4 a b c   *(b)* t1+t2   *(c)* 2 3 4   *(d)* a b c

---

8. .... can store different types of values

    (a) variable   *(b)* list   *(c)* function   *(d)* a and c

---

9. .... is a collection of **unordered**, **non indexed** and **non duplicated** data

    (a) variable   *(b)* set   *(c)* list   *(d)* tuple

---

10. What is the **output** of the following:

```
A=25
print(a)
```

    (a) error   *(b)* 25   *(c)* a   *(d)* A

Question 2: (15 Marks)

Choose the equivalent code for each of the following:

11.

```
x=3
if x>3:
    print('x>3')
else:
    print('x !> 3')
```

(a)
```
x=3
if x>3 print('x>3') else print('x !> 3')
```

(b)
```
x=3
if x>3 print('x>3')    print('x !> 3') else
```

(c)
```
x=3
print('x>3') if x>3    else print('x !> 3')
```

(d)
```
x=3
print('x>3') if x>3    print('x !> 3')    else
```

12.

```
d={'k1': 25, 'k2': 46}
for k, v in d.items():
    print(k, v)
```

(a)
```
d={'k1': 25, 'k2': 46}
for k in d:
    print(k, d[k])
```

(b)
```
d={'k1': 25, 'k2': 46}
for k in d.items():
    print(d)
```

(c)
```
d={'k1': 25, 'k2': 46}
for k in d:
    print(k)
```

(d)
```
d={'k1': 25, 'k2': 46}
for k in d:
    print(d[k)
```

13.

```
num=35
if num%2==0:
        print('even')
else:
        print('odd')
```

(a)
```
num=35
print([num%2==0]('odd', 'even'))
```

(b)
```
num=35
print([num%2==0]('even', 'odd'))
```

(c)
```
num=35
print(('even', 'odd')[num%2==0])
```

(d)
```
num=35
print(('odd', 'even')[num%2==0])
```

14.

```
alpha=('a', 'b', 'c', 'd')
for i in range(len(alpha)):
        print(alpha[i])
```

(a)
```
alpha= ('a', 'b', 'c', 'd')
for i in range(len(alpha)):
        print(i)
```

(b)
```
alpha= ('a', 'b', 'c', 'd')
for i in range(len(alpha)):
        print(alpha)
```

(c)
```
alpha= ('a', 'b', 'c', 'd')
for i in alpha:
        print(i)
```

(d)
```
alpha= ('a', 'b', 'c', 'd')
for i in range(len(alpha)):
        pass
```

15.

```
x=3
z=[]
for i in range(3):
    if i%2==0:
        z[i:]=[i]
```

(a)
```
x=3
z =[ i    for i in range(3)        if i%2==0    ]
```

(b)
```
x=3
z =[ i    if i%2==0    for i in range(3) ]
```

(c)
```
x=3
z =[ if i%2==0    i    for i in range(3) ]
```

(d)
```
x=3
z =[ for i in range(3)    if i%2==0     i ]
```

Question 3: (15 Marks)

Choose the error line number in each of the following:

16.
```
1. class A:
2.     def square(x):
3.         return x**2
4. a=A()
5. a.square(3)
```

(a) line 1   *(b)* line 3   *(c)* line 4   *(d)* line 5

17.

```
1. class A:
2.      def __init__(self, x):
3.          self.__x=x

4. class B:
5.      def __init__(self, r):
6.          self.__r=r

7. class C(A, B):
8.      pass

9. c=C(2, 4)
```

(a) line 3   *(b)* line 6   *(c)* line 7   *(d)* line 9

18.

```
1. class A:
2.      def __foo(self, x):
3.          return x*2
4. a=A()
5. a.__foo(5)
```

(a) line 1   *(b)* line 3   *(c)* line 5   *(d)* line 4

19.

```
1. def foo(a, b):
2.      c=a+b
3.      return c

4. x=3
5. print(foo(x))
```

(a) line 2   *(b)* line 3   *(c)* line 4   *(d)* line 5

20.

```
1. def fun (*arg):
2.     x=len(arg)
3.     for i in range(x):
4.         print(arg[i])
5. fun(2, 3, 4, a=5)
```

(a) line 2   *(b)* line 3   *(c)* line 4   *(d)* line 5

Question 4: (40 Marks)

Choose the the correct output each of the following:

21.

```
x=2
while(x<4):
    x=x+1
    if x==4:
        continue
    print(x)
```

(a)   2   3   4   *(b)*   2   3   *(c)* 4   *(d)* 3

22.

```
x=1
while(x<2):
    x+=1
    print(x)
else:
    print('hello')
```

(a)   2   hello   *(b)*   1   2   *(c)*   2   *(d)*   hello

23.

```
x=set()
x.add('orange')
print(x)
```

(a) orange   *(b)* x   *(c)* o r a n g e   *(d)* {'orange'}

24.

```
def myfun (a, b=4):
    print(a/b)
x, y=4, 8
myfun(b=x, a=y)
```

(a) 2   *(b)* no output   *(c)* 1   *(d)* 0.5

25.

```
def foo(**grades):
    print(len(grades))
    print(type(grades))
foo(a=96, b=82, c=70)
```

(a) 3   Dictionary   *(b)* 6   *(c)* tuple   *(d)* 6 tuple

26.

```
x=lambda a: a**2
print(x(3))
```

(a) 6   *(b)* 3   *(c)* 9   *(d)* 5

27.

```python
x=[1, 2, 3]
w=x[:]
if id(w)==id(x):
    print('same object')
else:
    print('different object')
```

(a) same object *(b)* different object *(c)* true *(d)* false

---

28.

```python
def foo(x):
    for i in range (2):
        x[i:]=[i]
x=[]
foo(x)
print(x)
```

(a) [ ] *(b)* [0, 1] *(c)* x *(d)* no output

29.

```python
class A:
    def _foo(self, x):
        print(x*2)
class B(A):
    def _foo(self, x, y, z):
        super()._foo(x)
        print(y+z)
b=B()
b._foo(1, 2, 3)
```

(a) 4 *(b)* 2   5 *(c)* 6 *(d)* [5   3   9]

30.

```
class A:
    def foo(self, x):
        return x*2

class B(A):
    pass

class C(B):
    pass

c=C( )
Print(c.foo(4))
```

(*a*) 4   (*b*) foo   (*c*) no output   (*d*) 8

set() creates a set.

add() adds an item to a set.

items() returns a list of dictionary's (key, value) tuple pairs.

len(x) returns the number of items in the collection x.

range(n) generates a sequence of numbers from zero to n-1.