

.....  
**Question 1 (1.5 points) :** Qu'est-ce que ce programme affiche ?

*Note: The question operates on strings, so it is out of scope of the midterm exam. However, you can convert string to a list, by calling list( ) function and passing the string as the argument. For example: s\_list = list(s). Try solving the question assuming s is replaced with the list s\_list.*

```
s = 'Abracadabra'  
if (s[0] == s[3]):  
    print(s[0:3])  
elif (s[1] == s[-2]):  
    print(s[:])  
elif (s[-1] == s[-6]):  
    print(s[-1::-4])  
else:  
    print(s[::-1])
```

(a)

(b)

(c)

(d)

**Question 2 (1 points) :** Qu'est-ce que ce programme affiche ?

```
x = 2  
y = 5  
z = x - y//x  
w = y + x/y  
r = z or w  
print(r)
```

(a)

(b)

(c)

(d)

.....  
**Question 3 (1.5 points) :** Qu'est-ce que ce programme affiche ?

```
import math

x = 8
y = 2**2

z = math.log2(x)**math.log2(y)
z = -z
z = z % y
print(z)
```

**Question 4 (1.5 points) :** Qu'est-ce que ce programme affiche ?

```
N = 15
cnt = 0
for i in range (1, int(N/3) + 1, 2):
    for j in range (int(N/3), int(2*N/3) + 1, 2):
        for k in range(int(2*N/3), N + 1, 2):
            cnt = cnt + 1
print(cnt)
```

**Question 5 (1.5 points) :** Qu'est-ce que ce programme affiche ?

```
s = '1001'
l = len(s)
r = sum([int(s[l - i - 1]) * 2**i for i in range(l)])
print(r)
```

*Note: The question operates on strings, so it is out of scope of the midterm exam. However, you can convert string to a list, by calling list( ) function and passing the string as the argument. For example: s\_list = list(s). Try solving the question assuming s is replaced with the list s\_list.*

.....

**Question 6 (1.5 points) :** Qu'est-ce que ce programme affiche ?

*Note: The question operates on strings, so it is out of scope of the midterm exam. However, you can convert string to a list, by calling list() function and passing the string as the argument. For example: s\_list = list(s). Try solving the question assuming s is replaced with the list s\_list.*

```
s = '0001011110'
n = len(s)
i = -1
while n:
    i = i + 1
    if s[i] == '1':
        n = n - 1
        continue
    elif s[i] == s[i+1]:
        n = n - 2
    else:
        n = n - 1
print(s[i], end = ':')
```

(a)

(b)

(c)

(d)

**Question 7 (1 points) :** Qu'est-ce que ce programme affiche ?

```
'''
La methode index() renvoie l'index d'un element
dans une liste.
La methode count() renvoie le nombre
d'occurrences d'un element dans une liste.
'''

l = [[3], 3, [3, 3, 3]]
print(l.index(3))
print(l.count(3))
```

(a)

(b)

(c)

(d)

.....  
**Question 8 (1.5 points) :** Qu'est-ce que ce programme affiche ?

*Note: The question operates on strings, so it is out of scope of the midterm exam. However, you can convert string to a list, by calling list() function and passing the string as the argument. For example: s\_list = list(s). Try solving the question assuming s is replaced with the list s\_list.*

```
s = 'La Fete des Vignerons unit les generations'  
t = s[:len(s)//2]  
print(t[::2]) if len(t) % 2 else print(t[::-2])
```

(a)

(b)

(c)

(d)

**Question 9 (1.5 points) :** Qu'est-ce que ce programme affiche ?

*Note: Out of scope for the midterm exam*

```
def f(t1, t2, n):  
    if (n < 2):  
        return 0  
    else:  
        if (t1[n] <= t2[n]):  
            return f(t1, t2, n-1)  
        else:  
            return 1 + f(t1, t2, n-1)  
  
t1 = [1,2,0,0,2,3,0,0,3,4,0,0]  
t2 = [1,0,0,0,3,0,0,0,4,0,0,0]  
  
print(f(t1,t2, len(t1) - 1))
```

(a)

(b)

(c)

(d)

.....  
**Question 10 (1 points) :** Qu'est-ce que ce programme affiche ?

*Note: Out of scope for the midterm exam*

```
a = -2000
b = 4001
c = 6002

c, b, a = c // a, b or a, c % a

print(a, b, c)
```

(a)

-4 True 2

(b)

-1998 4001 -4

(c)

2 True -3

(d)

-1998 4001 -3

**Question 11 (1.5 points) :** Qu'est-ce que ce programme affiche ?

*Note: Out of scope for the midterm exam*

```
director = set('Quentin Tarantino')
movie = set('Pulp Fiction')
role = set('John Travolta') | set('Uma Thurman')

x = (director - movie) | (role ^ director)
print(len(x))
```

(a)

10

(b)

11

(c)

9

(d)

12

.....  
**Question 12 (1.5 points) :** Qu'est-ce que ce programme affiche ?

*Note: Out of scope for the midterm exam*

```
# La méthode keys() renvoie tous les clés d'un dictionnaire
v = ['a', 'e', 'u', 'o', 'i']
d = {'a' : 10, 'm' : 20, 'q': 25, 'u': 25, 'e' : 20}
cnt = 0
j = v[0]
for i, k in enumerate(v):
    if k in d.keys():
        if d[k] > cnt:
            cnt = d[k]
            j = k

print(j)
```

(a)

(b)

(c)

(d)

**Question 13 (1 points) :** Qu'est-ce que ce programme affiche ?

*Note: Out of scope for the midterm exam*

```
# La méthode items () renvoie la liste avec toutes les
    clés et les valeurs d'un dictionnaire
s = 'ABCDEFGHJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz'
d = {'1': 3, 'a': 4, 'G': 7, '%': 1}
d = {k: v for k, v in d.items() if k in s}
print(d)
```

(a)

(b)

(c)

(d)

.....  
**Question 14 (1 points) :** Qu'est-ce que ce programme affiche ?

*Note: Out of scope for the midterm exam*

```
n = [2, 3, 1]
s = ['mango', 'apple', 'kiwi']

result = list(zip(n, s))
print(result)
```

(a)  
[2, 3, 1, 'mango', 'apple', 'kiwi']

(b)  
[(1, 'mango'), (2, 'apple'), (3, 'kiwi')]

(c)  
[[2, 3, 1], ['mango', 'apple', 'kiwi']]

(d)  
[(2, 'mango'), (3, 'apple'), (1, 'kiwi')]

**Question 15 (1.5 points) :** Qu'est-ce que ce programme affiche ?

*Note: Out of scope for the midterm exam*

```
# La methode count() renvoie le nombre
# d'occurrences d'un element dans une liste.

b = 'knife'
a = 'fork'

def f5(a):
    b = 'spoon'
    print(a + b)

def f6(a):
    global b
    b = 'glass'
    print(b + a)

f5(a)
f6(b)
print(b)
```

(a)  
forkspoon  
glassknife  
glass

(b)  
knifespoon  
glassknife  
knife

(c)  
knifespoon  
glassknife  
glass

(d)  
forkspoon  
glassknife  
knife