16/08/25

① What are the outputs if inputs of [25, 10.5, 'H4d', True]

```
a=input('Enter list:')          # "[25,10.5,'H4d',True]"
print(type(a))                  # class string
print(a)                        # [25,10.5,'H4d',True]
b=eval(a)                       # [25,10.5,'H4d',True] string into python object
print(b)                        # [25,10.5,'H4d',True]
print(type(b))                  # list
```

② # find outputs

```
a=[10,20,15,18]                 # [10,20,15,18]
b=a                             # b is not a copy of a another reference pointing the same list
print(a is b)                   # True
print(a==b)                     # True
b[2]=12                         # [10,20,12,18]
print(a)                        # [10,20,12,18]
```

③ find outputs

```
a=[10,20,15,18]
b=[100,200,150]
print(a+b)                      # [10,20,15,18,100,200,150]
print(a+5)                      # Error -> cannot add an integer list can only
print(a+'5')                    # Error -> can only concatenate list
print([10,20]+(30,40))          # Error -> can only concatenate list
```

④ # Tricky find outs

```
a=[1,2,3)                       # a:[1,2,3]
b=(4,5,6)                       # b=[4,5,6]
```

```
print(a, id(a))      [1, 2, 3]
a += b               # [1, 2, 3, 4, 5, 6] += extend in place in same list no
print(a, id(a))      # [1, 2, 3, 4, 5, 6]
```

⑤ # Tricky program

```
a = [1, 2, 3]        # 0 [1, 2, 3]
b = [4, 5, 6]        #   [4, 5, 6]
print(a, id(a))      #   [1, 2, 3]
a = a + b            #   [a+b creates new list object assigned back
print(a, id(a))      #   [1, 2, 3, 4, 5, 6]
```

⑥ # list packing

```
a = 25               # integer
b = 10.8             # float
c = 'Hyd'            # string
d = True             # boolen
e = [a, b, c, d]     # [a, b, c, d]
print(e)             # [25, 10.8, 'Hyd', True]
print(type(e))       # list
```

⑦ # find outputs

```
list = [25, 10.8, 'Hyd', True]
a, *b, c = list      # a=25 c = True b=[10.8, 'Hyd']
print('a:', a)       # a:25
print('b:', b)       # b: [10.8, 'Hyd']
print('c:', c)       # c = True
print(type(b))       # list
x, *y = list         # x=25 y=[10.8], 'Hyd', True]
print('x:', x)       # x:25
print('y:', y)       # y: [10.8, 'Hyd', True]
*p, q = list         # list q=True p=[25, 10.8, 'Hyd']
```

```
print('p:',p)          # q= True
print('q:',q)          # p = [25,10.8,'H4d']
```

⑧ # find outputs

```
list =[25, 10.5, 'H4d', True]      # [25, 10.8, 'H4d', True]
a,b,c,d,e = list                   # not enough values to unpack
a,b,*c,d,e = list                  # error not enough values to unpack
print('a:',a)                      # 25
print('b:',b)                      # 10.8
print('c:',c)                      # 'H4d'
print('d:',d)                      # d= 'H4d'
print('e:',e)                      # e= True
a,b,*c,d,e,f = list                # not enough values to unpack
```

⑨ # find outputs

```
list =[25,10.8,'H4d',True]         # [25, 10.8, 'H4d', True]
a,b,_,d = list                     # a,b, _, d
print('a:',a)                      # 25
print('b:',b)                      # 10.8
print('_:',_)                      # H4d
print('d:',d)                      # True
```

⑩ # find outputs

```
list =[25,10.8,'H4d',True,3+4j]
a,b,a,d,a = list                   # [25, 10.8, 'H4d', True, 3+4j]
print('a:',a)                      # a:3+4j)
print('b:',b)                      # b: 10.8
print('d:',d)                      # d: True
```

(11) Tricky program

```
# find outputs
list = [25, 10.8, 'Hyd', True, 3+4j]   # [25, 10.8, 'Hyd', True, 3+4j]
a, b, _, d, _ = list                    # list
print('a:', a)                          # a: 25
print('b:', b)                          # b: 10.8
print('_:', _)                          # _ = 'Hyd'
print('d:', d)                          # d = True
print('_:', _)                          # _ = 3+4j
```

(12) Identify error

```
list = [25, 10.8, 'Hyd', True, 3+4j]   # [25, 10.8, 'Hyd', True, 3+4j]
a, *b, c, *d, e = list                  # Error: two starred expression in assignment
```

(13) # find outputs

```
list = [[25, 10.8], 'Hyd', True]   # Nested list
a, b, c = list                     # list
print('a:', a)                     # a: [25, 10.8]
print('b:', b)                     # b: Hyd
print('c:', c)                     # c: True
```

(14) find outputs

```
list = [[25, 10.8], 'Hyd', True]
[a, b], c, d = list                # [a, b], c, d]
print('a:', a)                     # a: [25, 10.8]   a: 25
print('b:', b)                     # b: 'Hyd' 10.8
print('c:', c)                     # c = Hyd
print('d:', d)                     # d = True
a, b, c, d = list                  # not enough value (expected 4, got 3)
```

(15) # Comparing lists

```
a = [10, 20, 15, 18]
b = [10, 20, 15, 18]
c = [10, 20, 25, 9]
d = [10, 20, 7, 22]

print(a==b)      # a and b are [10, 20, 15, 18] -> True
print(a is b)    # False -> contents same but two separate list
print(a<c)       # 15<25 -> so a<c -> True
print(a>b)       # True -> 15>7 -> a>d
print(a>=c)      # False
print(a<=d)      # False
print(a!=c)      # True
print(a!=b)      # False
print(a==c)      # False
```

(16) # Comparing lists

```
a = [10, 20, 15, 18]
b = [20, 18, 15, 10]
print(a==b)      # False
print(a is b)    # False two separate list in memory
```