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Python Final Practical Examination

(1) a)
```
def patternprint(rows):
    ''' Pyramid of No's in Reverse order. '''
    for row in range(1, rows):
        for j in range(i, 0, -1):
            print(j, end = ' ')
        print("\n")

patternprint(6)
```

Output

```
1
2 1
3 2 1
4 3 2 1
5 4 3 2 1
```

(b)
```
def patternprint2(rows):
    ''' Reverse pyramid of even numbers '''
    for i in range(0, rows):
        for j in range(0, i+1):
            print(10-(j*2), end = ' ')
        print('\r')

patternprint2(5)
```

Output

```
10
10 8
10 8 6
10 8 6 4
10 8 6 4 2
```

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(2)

```
user_str = input("Enter your string: ")
words = user_str.split()

for i in range(0, len(words), 2):
    words[i] = words[i][::-1]

output_str = ' '.join(words)
print(output_str)
```

(3)

Problem: TypeError: value of positional argument is missing from

```
A.__init__()
a = A()    # Error
```

Fixation: By providing some argument inside A(). This problem will get solve.

```
a = A(2)    # Correction
```

Correct code:

```
class A:
    def __init__(self, i):
        self.i = i

def main():
    a = A(2)    # correction
    print(a.i)

main()
```

Output = 2

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(4)

```
list1 = [7,10,11,3,6,9,2,13,0]
list2 = []
list3 = []

for i in range(len(list1)):
    if i%2==0:
        list2.append(list1[i])
    else:
        list3.append(list1[i])

list2.sort(reverse=True)
list3.sort()
k = 0
j = 0
for i in range(len(list1)):
    if i%2==0:
        list1[i] = list2[k]
        k+=1
    else:
        list1[i] = list3[j]
        j+=1

print(list1)
```

Input: [7,10,11,3,6,9,2,13,0]
Output: [11,3,7,9,6,10,2,13,0]

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(5)

```
import matplotlib.pyplot as plt

def plot_functions(x):
    y = [(3*i**2 + 7*i + 2) for i in x]
    plt.plot(x, y, 'y')
    plt.xlabel('X')
    plt.ylabel('Y')
    plt.grid()
    plt.show()

def input_user():
    x = eval(input("Enter your list
                    here :"))
    plot_functions(x)

input_user()
```

(6) If read() or readline() is invoked at the end of file, No Runtime Error will be generated.
This is because read() will return an empty string as output when it reaches the end of file. Same is the case with readline(), it will also return an empty string.

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(7)

```
input_dict = {'first': {'a': 7, 'b': 9, 'c': 12}, 'second': {'a': 15, 'b': 19, 'c': 20}, 'third': {'a': 5, 'b': 10, 'c': 24}}

a = input("Enter the key:")
list1 = []
for key in input_dict:
    if a in input_dict[key]:
        list1.append(input_dict[key][a])

print("Output:", list1)
```

```
Enter the key: b
Output: [9, 19, 10]
```

← output