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Subject: Modern Programing Language
Final Term Exam

Q1: Write a program to compute the frequency of the words from the user input. The output should output after sorting the key alphanumerically. Suppose the following input is supplied to the program:

“Pakistan country code is 92 and Pakistan also won world cup in 92”

Answer:

```
import operator
text_line = input("Type in: ")
freq_dict = {}
for i in text_line.split(' '):
    if i.isalpha():
        if i not in freq_dict:
            freq_dict[i] = 1
        elif i in freq_dict:
            freq_dict[i] = freq_dict[i] + 1
    else:
        pass
sorted_freq_dict = sorted(freq_dict.items(), key = operator.itemgetter(0))
print(sorted_freq_dict)
for i in sorted_freq_dict:
    print(i[0], i[1])
```

Q2: Print the following pattern using for loop (nested loop)

Answer:

```
rows = 5
for i in range(0, rows + 1):
    for j in range(rows - i, 0, -1):
        print(j, end=' ')
    print()
```

Q3: Write a Python function that takes a list and returns a new list with unique elements of the first list also print the returned list.

Answer:

```
def unique_list(l):
    x = []
    for a in l:
        if a not in x:
            x.append(a)
    return x
a=[1,2,3,3,3,3,4,5,6,7,7,7,7,7]
print("\nOriginal list")
print(a)

print("\nUnique list")
print(unique_list(a))
```

Q4: Write a Python function that that prints out the first n rows (input no of rows from user) of Pascal's triangle.

Answer:

```
n = int(input("Enter no of rows: "))
a = []
for i in range(n):
    a.append([])
    a[i].append(1)
    for j in range(1, i):
        a[i].append(a[i - 1][j - 1] + a[i - 1][j])
    if(n != 0):
        a[i].append(1)
for i in range(n):
    print(" " * (n - i), end = " ", sep = " ")
    for j in range(0, i + 1):
        print('{0:6}'.format(a[i][j]), end = " ", sep = " ")
    print()
```

Q5: Write a recursive function to calculate the sum of numbers from 0 to 10

Answer:

```
def recur_sum(n):  
    if n <= 1:  
        return n  
    else:  
        return n + recur_sum(n-1)  
num = 10  
if num < 0:  
    print("Enter a positive number")  
else:  
    print("The sum is:",recur_sum(num))
```