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1. Find the output of the following Python codes.   [2+4+4=10]

(a)
```python
for i in range(2,8,2):
    print(i-i)
```

(b)
```python
sum = 10
for i in range(1, 4):
    sum = sum + 10
    for j in range(1, 4):
        sum = sum + 20
        for k in range(1, 4):
            sum = sum + 30
print("Total sum:" , sum)
```

(c)
```python
str = "Data Science, United International University"
listOfWords = []
word=""
count=0

for c in str:
    if c==' ':
        count= count+1
        listOfWords.append(word)
        word=""
    else:
        word = word+c
listOfWords.append(word)
print(count)
word=""
for w in listOfWords:
    word=word+w[0]
print(word)
```

2. (a) Write a python code that will print the sum of all positive numbers in a list. For example for the following list your code will print 18. [4]

```
listA=[4,6,-3,-4,2,6]
```

(b) There are two lists as following.

```
listCountries=["Bangladesh","India","Pakistan","Srilanka","Afganistan"]
listCapitals=["Dhaka","Delhi","Islamabad","Colombo","Kabul"]
```

The first list contains the name of the countries and the last list contains the name of the capitals. Write a program that will take a country name (string) as input from the user and output the capital of that country if it is in the list. Ohterwise it will print "unknown". [4]

(c) The following code is supposed to find the maximum number in a list.

```
listNum = [4,5,-7,41,3,17,2]
maxi = listNum[0]
for i in range(1,len(listNum)):
    if i > maxi:
        maxi = i
print(maxi)
```

But, there is a mistake (not a syntax error) in the code in a single line and the code is not printing the maximum number. Fix and rewrite the code. Explain the error. [2]

3. (a) Find the output of the following Python codes. [0.75x4=3]

```
lst=[2,3,4,5,6,7,8]
print(lst[3:-3])
print(lst[:])
print(lst[:-3])
print(lst[-3:])
```

Sample input	Sample output
40	24.00
140	111.00
235	242.40
313	377.40

Table 1: Sample input/output of electricity unit consumption and charge.

(b) Write a Python program to input consumed electricity unit from the user and calculate the total electricity bill according to the given conditions. Table 1 shows the sample input and output. [4]

    i. For first 50 units bill is Tk. 0.50/unit

    ii. For next 100 units bill is Tk. 0.75/unit

    iii. For next 100 units bill is Tk. 1.20/unit

    iv. For unit above 250 Tk. bill is 1.50/unit

    v. An additional surcharge of 20% is added to the bill

(c) *message= "I love watching cricket, but quality our cricket should be improved."* Write a Python code which first finds out whether "cricket" exists in the string *message*, if the word exists, then the code replaces "cricket" with "soccer". [3]