2018 SEC 4 COMPUTING PRELIM PAPER 2 MARKING SCHEME

Task 1

Question	Answer	Marks
1	==B3*12 or =\$B\$3*12 or =B\$3*12 or =\$B3*12	1
2	Interest Rate	1
	Year 1 1.70%	
	Year 2 1.70%	
	Year 3 1.70%	
	Thereafter 4 1.70%	
2(a)		1
5(a)	=IF(ROW(B10)-9>\$B\$4, "", ROW(B10)-9)	1
	(Or equivalent)	
2(1)		1
3(b)	=IF(B10="","", <mark>CEILING(B10/12.1)</mark>)	1
	=IF(B11="","",CEILING(B11/12,1))	
	= IF(B489="","",CEILING(B489/12,1)) (Or equivalent)	
3(c)		1
	=IF(B10="","", <mark>ABS(PMT(C10/12,\$B\$4,\$B\$2))</mark>)	
	(Or equivalent)	
3(d)	-IE(D10-"", "", ADS(IDMT(C10/12, D10, CDC4, CDC2)))	1
	(Or equivalent)	
3(e)		2
	In cell G10: $=IF(B10="", "", E10-F10)$	
	(Or equivalent) = IF(B10 =,, D10-G10)	

3(f)	copying formulae A10:H10 to rows 11 to 489.	1
4	Image: Scenario Manager Goal Seek Data Table Loan Details Loan Amount 1000000 Goal Seek Status Goal Seek Status Goal Seeking with Cell E46 found a solution. Target value: -4000 Current value: (\$4,000.00) Pause He should set the loan tenure to 27 years and 3 months.	1

Task 2

Question	Answer	Marks
5(a)	size = 10	1
5(b)	correct validation criterion	2
	printing feedback AND asking for input again.	
	Insert between line 4 and 5:	
while True	e:	
try:		
income	<pre>e = int(input("({})Annual income in \$: ".format(employee+1)))</pre>	
if in	come < 0 or income > 120000:	
ra	ise Exception	
except:		
<pre>print("Please enter a value from 0 to 120000!")</pre>		
else:		
b	reak	
OR		
income : while i	<pre>int(input("({})Annual income in \$: ".format(employee+1))) ncome < 0 or income > 120000:</pre>	
income	e = print("Please enter a value from 0 to 120000!")	
5(c)		2

	highestTax = ∅	
	if tax > highestTax:ORhighestTax =highestTax = taxn = employee + 1max(highestTax, tax)	
	<pre>print("Highest tax payable is \$", round(highestTax,2))</pre>	
5(d)	<pre>if tax > highestTax: highestTax = tax n = employee + 1</pre>	1
	<pre>print("Employee {} paid the highest tax.".format(n))</pre>	
5(e)	<pre>count = 0 if income <= 20000: tax = 0 count += 1 print("Percentage when do not need to new taxy</pre>	2
	{}%.".format(round(count/size*100,1)))	
6	Correct the four highlighted parts: elif income <= 30000: tax = (income-20000) * 0.02 elif income <= 40000: tax = 200 + (income-30000) * 0.035 elif income <= 80000: tax = 550 + (income-40000) * 0.07 else: tax = 2800 + (income-80000) * 0.115	2

Task	3
------	---

Question	Answer	Marks
7	s <mark>= 0</mark>	10
	count = 0	
	while True <mark>:</mark>	
	<pre>x = input('Enter a positive integer. Type "done" to finish.')</pre>	
	<pre>if x == "done":</pre>	
	break	
	elif not x.isdigit <mark>()</mark> :	
	print <mark>(</mark> "Invalid input. Try again." <mark>)</mark>	
	else:	
	x = int(x)	
	<pre>if count == 0:</pre>	
	M = m = x	
	else:	
	$M = \max(M, x)$	
	$m = \min(m, x)$	
	s += x	
	Count += 1	
	if count==0:	
	average = s = M = m = "NA"	
	<pre>average = round(s/count, 1)</pre>	
	<pre>print("\nYou have entered {} number(s).".format(count)]</pre>	
	<pre>print("The sum of the number entered is {}.".format(s))</pre>	
	<pre>print("\nThe average of the number entered is {}.".format(average))</pre>	
	<pre>print("\nThe maximum of the number entered is {}.".format(M))</pre>	
	<pre>print("The minimum of the number entered is {}.".format(m))</pre>	

Task 4

Question	Answer	Marks
8	<pre>while True: i = input('Enter a string of digits or space:') if any([not x in '0123456789 ' for x in i]): print('Input error! Try again!') else: break</pre>	12
	<pre>F = [i.count(x) for x in '0123456789 '] B = [x for x in i.split() if sum([int(y) for y in x])>=20]</pre>	
	<pre>blocks = 0 if i.isspace() else 1 s = 0 count = 0 for x in range(1, len(i)-1): if i[x]==' ' and i[x+1]!=' ': blocks += 1</pre>	
	<pre>for x in '0123456789': print('Frequency of {}: {}'.format(x, F[int(x)]))</pre>	
	<pre>print('\nNumber of block(s): {}'.format(blocks))</pre>	
	<pre>print('Block(s) with sum 20 or more:') for i, b in enumerate(B): print('({}) {}'.format(i+1, b))</pre>	

Question	Answer	Marks
9	Enter : 3647 94859 8482 3209 832 45346 Frequency of 0: 1 Frequency of 1: 0 Frequency of 2: 3 Frequency of 3: 4 Frequency of 4: 5 Frequency of 5: 2 Frequency of 6: 2 Frequency of 7: 1 Frequency of 8: 4 Frequency of 9: 3	3
	Number of block(s): 6	
10	<pre>while True: i = input('Enter a string of digits or space:') if any([not x in '0123456789 ' for x in i]): print('Input error! Try again!') else: break F = [i.count(x) for x in '0123456789 '] B = [x for x in i.split() if sum([int(y) for y in x])>=20] blocks = 0 if i.isspace() else 1 s = 0 count = 0 for x in range(1, len(i)-1): if i[x]==' ' and i[x+1]!=' ': blocks += 1 for x in '0123456789': print('Frequency of {}: {}'.format(x, F[int(x)])) print('NNumber of block(s): {}'.format(blocks)) print('Block(s) with sum 20 or more:') for i, b in enumerate(B): print('{{}} {}'.format(i+1, b))</pre>	5