

2020 SEC 4 COMPUTING PRELIM PAPER 2 MARKING SCHEME

Task 1

Question	Answer																																																																																																																																																																																																																																																																																																																																																					
	<table><tr><td></td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td></tr><tr><td>1</td><td colspan="10">CARS LIST</td></tr><tr><td>2</td><td>Customer ID</td><td>Vehicle Model</td><td>Price</td><td>Down Payment</td><td>Loan Amount</td><td>Loan Term (Years)</td><td>Interest Rate (P.A.)</td><td>Monthly Instalment</td><td>Reminder (Yes/No)</td><td></td></tr><tr><td>3</td><td>ID00001</td><td>Swirl 1.4</td><td>\$35,000.00</td><td>\$8,000.00</td><td>\$27,000.00</td><td>2</td><td>2.0%</td><td>\$1,148.59</td><td>No</td><td></td></tr><tr><td>4</td><td>ID00002</td><td>WPX 1.6</td><td>\$53,000.00</td><td>\$13,000.00</td><td>\$40,000.00</td><td>7</td><td>2.4%</td><td>\$517.78</td><td>No</td><td></td></tr><tr><td>5</td><td>ID00003</td><td>DMW 1.6</td><td>\$55,000.00</td><td>\$15,000.00</td><td>\$40,000.00</td><td>10</td><td>2.8%</td><td>\$382.56</td><td>No</td><td></td></tr><tr><td>6</td><td>ID00004</td><td>Electric 1.4</td><td>\$42,000.00</td><td>\$10,000.00</td><td>\$32,000.00</td><td>8</td><td>2.6%</td><td>\$369.56</td><td>No</td><td></td></tr><tr><td>7</td><td>ID00005</td><td>Maxi 1.6</td><td>\$49,000.00</td><td>\$12,000.00</td><td>\$37,000.00</td><td>6</td><td>2.4%</td><td>\$552.29</td><td>No</td><td></td></tr><tr><td>8</td><td>ID00006</td><td>Picoto 1.4</td><td>\$38,000.00</td><td>\$9,000.00</td><td>\$29,000.00</td><td>3</td><td>2.0%</td><td>\$830.63</td><td>Yes</td><td></td></tr><tr><td>9</td><td>ID00007</td><td>Corona 1.6</td><td>\$65,000.00</td><td>\$13,000.00</td><td>\$52,000.00</td><td>8</td><td>2.6%</td><td>\$600.54</td><td>No</td><td></td></tr><tr><td>10</td><td>ID00008</td><td>Hunter 1.4</td><td>\$36,000.00</td><td>\$10,000.00</td><td>\$26,000.00</td><td>5</td><td>2.2%</td><td>\$458.00</td><td>No</td><td></td></tr><tr><td>11</td><td>ID00009</td><td>Berry 1.4</td><td>\$40,000.00</td><td>\$8,000.00</td><td>\$32,000.00</td><td>7</td><td>2.4%</td><td>\$414.23</td><td>No</td><td></td></tr><tr><td>12</td><td>ID00010</td><td>Audio 1.6</td><td>\$73,000.00</td><td>\$15,000.00</td><td>\$58,000.00</td><td>8</td><td>2.6%</td><td>\$669.83</td><td>No</td><td></td></tr><tr><td>13</td><td>ID00011</td><td>Lander 1.4</td><td>\$41,000.00</td><td>\$10,000.00</td><td>\$31,000.00</td><td>7</td><td>2.4%</td><td>\$401.28</td><td>No</td><td></td></tr><tr><td>14</td><td>ID00012</td><td>Leopard 1.6</td><td>\$52,000.00</td><td>\$14,000.00</td><td>\$38,000.00</td><td>9</td><td>2.6%</td><td>\$395.00</td><td>No</td><td></td></tr><tr><td>15</td><td>ID00013</td><td>Endora 1.4</td><td>\$37,000.00</td><td>\$10,000.00</td><td>\$27,000.00</td><td>8</td><td>2.6%</td><td>\$311.82</td><td>No</td><td></td></tr><tr><td>16</td><td>ID00014</td><td>Citric 1.6</td><td>\$58,000.00</td><td>\$12,000.00</td><td>\$46,000.00</td><td>5</td><td>2.2%</td><td>\$810.31</td><td>Yes</td><td></td></tr><tr><td>17</td><td>ID00015</td><td>Supreme 1.6</td><td>\$60,000.00</td><td>\$14,000.00</td><td>\$46,000.00</td><td>10</td><td>2.8%</td><td>\$439.95</td><td>No</td><td></td></tr><tr><td>18</td><td colspan="10"></td></tr><tr><td>19</td><td>Total Price</td><td>\$734,000.00</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>20</td><td>Price Range</td><td>\$38,000.00</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>21</td><td></td><td></td><td></td><td></td><td></td><td colspan="2">Rate</td><td colspan="3">Description</td></tr><tr><td>22</td><td></td><td></td><td></td><td></td><td></td><td>Loan Term (Years)</td><td>Interest Rate (P.A.)</td><td colspan="3"></td></tr><tr><td>23</td><td></td><td></td><td></td><td></td><td></td><td>2</td><td>2.0%</td><td colspan="3">For loans taken for 2 to 3 years initially</td></tr><tr><td>24</td><td></td><td></td><td></td><td></td><td></td><td>4</td><td>2.2%</td><td colspan="3">For loans taken for 4 to 5 years initially</td></tr><tr><td>25</td><td></td><td></td><td></td><td></td><td></td><td>6</td><td>2.4%</td><td colspan="3">For loans taken for 6 to 7 years initially</td></tr><tr><td>26</td><td></td><td></td><td></td><td></td><td></td><td>8</td><td>2.6%</td><td colspan="3">For loans taken for 8 to 9 years initially</td></tr><tr><td>27</td><td></td><td></td><td></td><td></td><td></td><td>10</td><td>2.8%</td><td colspan="3">For loans taken for 10 years or more initially</td></tr><tr><td>28</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td colspan="3"></td></tr><tr><td>29</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td colspan="3"></td></tr><tr><td>30</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td colspan="3"></td></tr></table>		A	B	C	D	E	F	G	H	I	J	1	CARS LIST										2	Customer ID	Vehicle Model	Price	Down Payment	Loan Amount	Loan Term (Years)	Interest Rate (P.A.)	Monthly Instalment	Reminder (Yes/No)		3	ID00001	Swirl 1.4	\$35,000.00	\$8,000.00	\$27,000.00	2	2.0%	\$1,148.59	No		4	ID00002	WPX 1.6	\$53,000.00	\$13,000.00	\$40,000.00	7	2.4%	\$517.78	No		5	ID00003	DMW 1.6	\$55,000.00	\$15,000.00	\$40,000.00	10	2.8%	\$382.56	No		6	ID00004	Electric 1.4	\$42,000.00	\$10,000.00	\$32,000.00	8	2.6%	\$369.56	No		7	ID00005	Maxi 1.6	\$49,000.00	\$12,000.00	\$37,000.00	6	2.4%	\$552.29	No		8	ID00006	Picoto 1.4	\$38,000.00	\$9,000.00	\$29,000.00	3	2.0%	\$830.63	Yes		9	ID00007	Corona 1.6	\$65,000.00	\$13,000.00	\$52,000.00	8	2.6%	\$600.54	No		10	ID00008	Hunter 1.4	\$36,000.00	\$10,000.00	\$26,000.00	5	2.2%	\$458.00	No		11	ID00009	Berry 1.4	\$40,000.00	\$8,000.00	\$32,000.00	7	2.4%	\$414.23	No		12	ID00010	Audio 1.6	\$73,000.00	\$15,000.00	\$58,000.00	8	2.6%	\$669.83	No		13	ID00011	Lander 1.4	\$41,000.00	\$10,000.00	\$31,000.00	7	2.4%	\$401.28	No		14	ID00012	Leopard 1.6	\$52,000.00	\$14,000.00	\$38,000.00	9	2.6%	\$395.00	No		15	ID00013	Endora 1.4	\$37,000.00	\$10,000.00	\$27,000.00	8	2.6%	\$311.82	No		16	ID00014	Citric 1.6	\$58,000.00	\$12,000.00	\$46,000.00	5	2.2%	\$810.31	Yes		17	ID00015	Supreme 1.6	\$60,000.00	\$14,000.00	\$46,000.00	10	2.8%	\$439.95	No		18											19	Total Price	\$734,000.00									20	Price Range	\$38,000.00									21						Rate		Description			22						Loan Term (Years)	Interest Rate (P.A.)				23						2	2.0%	For loans taken for 2 to 3 years initially			24						4	2.2%	For loans taken for 4 to 5 years initially			25						6	2.4%	For loans taken for 6 to 7 years initially			26						8	2.6%	For loans taken for 8 to 9 years initially			27						10	2.8%	For loans taken for 10 years or more initially			28											29											30										
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1	=SUM(C3:C17)																																																																																																																																																																																																																																																																																																																																																					
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3	=C3-D3 [1 mark for correct first entry. 1 mark for all subsequent entries]																																																																																																																																																																																																																																																																																																																																																					
4	=VLOOKUP(F3,E\$22:F\$26,2,TRUE) [1 mark for correct first entry. 1 mark for all subsequent entries]																																																																																																																																																																																																																																																																																																																																																					
5	= -PMT(G3/12,F3*12,E3,0) [1 mark for correct first entry. 1 mark for all subsequent entries]																																																																																																																																																																																																																																																																																																																																																					
6	=IF(AND(E3>=28000,F3<=5),"Yes","No") [1 mark for correct first entry. 1 mark for all subsequent entries]																																																																																																																																																																																																																																																																																																																																																					

Task 2

Question	Answer	Marks
	<pre> #User sets password and tries to log into a system #Sets password that consists of at least 8 characters, #at least 1 upper case letter # Q9i Able to run Q9 with no errors [1 mark] # Q10i Able to run Task Q10 with no errors [1 mark] accept_length = False accept_uppercase = False # Q9ii Loop for user to input correct length [1 mark] # Q10ii Loop for user to input at least one uppercase [1 mark] while (accept_length == False) or (accept_uppercase == False): password = input("Please set password: ") print("Your password is : ", password) # Q9iii Printing input requirements of 8 characters with correct condition [1 mark] if len(password) < 8: print("Your password should be at least 8 characters long.") else: accept_length = True # Q10iii Correct checking of uppercase characters [1 mark] for char in password: if (ord(char) >= 65) and (ord(char) <= 90): accept_uppercase = True # Q10iv Printing input requirements of at least one uppercase with correct condition [1 mark] if accept_uppercase == False: print("Your password should consists of at least one uppercase alphabet.") #Reverse password reverse = "" #Q8i Consider each character in the password [1 mark] for char in password: reverse = char + reverse #Accept password[::-1] #Q8ii Print the password in reverse [1 mark] print("The reverse password is : ",reverse) #Log into system </pre>	

#Q7 Change the count from 3 to 4 [1 mark]

```
count = 4
hit = False
while count > 0 and hit == False:
    print("Please log into the system.")
    print("You have {} attempt(s) left.".format(count))
    user_input = input("Please enter the password: ")
    if user_input == password:
        print("You have successfully logged into the system.")
        hit = True
    else:
        print("You did not enter the correct password.")
        count -= 1

if count == 0:
    print("You are locked out of the system.")
```

Task 3

Question	Answer	Marks
<pre> DS = input("DD MM YYYY:").split() MM, Yr = int(DS[1]), int(DS[2]) leap_yr = False if (Yr % 4) == 0: if (Yr % 100) == 0: if (Yr % 400) == 0: leap_yr = True else: leap_yr = True max_day = 31 if MM in [4, 6, 9, 11]: max_day = 30 elif MM == 2: max_day = 28 if MM == 2 and leap_yr: max_day = 29 newDD, newMM, newYr = int(DS[0])+14, MM, Yr if newDD > max_day: newDD = newDD % max_day newMM += 1 if newMM > 12: newMM = 1 newYr += 1 print("+14 days\nDD: {} MM: {} YYYY: {}".format(newDD, newMM, newYr)) </pre>	<pre> } must individually cast into int, syntax error [1] } Uppercase F, syntax error [1] } Indented to 2nd if statement, syntax error [1] } 9 (Sept) instead of 8(Aug), logic error [1] } == symbol instead of =, syntax error [1] } implement check for number of days in leap year } logic error [2] } % instead of MOD, syntax error [1] newDD = newDD - max_day also accepted } += instead of -=, logic error [1] } "{}" missing, runtime error [1] </pre>	<pre> [1] [1] [1] [1] [2] [1] [1] [1] [1] </pre>

Task 4

Question	Answer	Marks
12	9x possible Output 1 mark each Using appropriate range for both randint statements. For-loop to generate N numbers	
13	Each correct display 1 mark each	
14	Check for Pass / Fail of die roll Loop to continue program	

Sample Code 4.1

```
import random

#Inputs & Validate
allOk = False
while not allOk:
    B, Tn, N, X, C = input("Enter values[B, Tn, N, X, C] : ").split()
    if not (B.isdigit() and 0 <= int(B) <= 10):
        print("Invalid input")
        continue
    if not (Tn.isdigit() and 5 <= int(Tn) <= 30):
        print("Invalid input")
        continue
    if not (N.isdigit() and 1 <= int(N) <= 20):
        print("Invalid input")
        continue
    if not (X.isdigit() and X in ["2", "4", "6", "8", "10", "12", "20"]):
        print("Invalid input")
        continue
    if not (C.isdigit() and 0 <= int(C) <= 10):
        print("Invalid input")
        continue
    allOk = True

#Output "1d20 +B, Target Number: Tn" and generate the random value
print("1d20 +{}, Target Number: {}".format(B, Tn))
num = random.randint(1, 20) + int(B)
print("Results\t: {}".format(num))
if num < int(Tn):
    print("Fail")
else:
    print("Pass")
    print("Damage\t: {}d{} +{}".format(N, X, C))
    total = 0
    print("Result\t: ", end = " ")
    for _ in range(int(N)):
        temp = random.randint(1, int(X))
        print(temp, end = " ")
        total += temp
    print("\nTotal: {}".format(total+int(C)))
```

Sample Code 4.3

```
import random

cont = "Y"
```

```

while cont != "NO":
    #Inputs & Validate
    allOk = False
    while not allOk:
        B, Tn, N, X, C = input("Enter values[B, Tn, N, X, C] : ").split()
        if not (B.isdigit() and 0 <= int(B) <= 10):
            print("Invalid input")
            continue
        if not (Tn.isdigit() and 5 <= int(Tn) <= 30):
            print("Invalid input")
            continue
        if not (N.isdigit() and 1 <= int(N) <= 20):
            print("Invalid input")
            continue
        if not (X.isdigit() and X in ["2", "4", "6", "8", "10", "12",
"20"]):
            print("Invalid input")
            continue
        if not (C.isdigit() and 0 <= int(C) <= 10):
            print("Invalid input")
            continue
        allOk = True

    #Output "1d20 +B, Target Number: Tn" and generate the random value
    print("1d20 +{}, Target Number: {}".format(B, Tn))
    roll1 = False
    num = random.randint(1, 20)
    if num == 1:
        roll1 = True
    else:
        num += int(B)
    print("Results\t: {}".format(num))
    if num < int(Tn) or roll1:
        print("Fail")
    else:
        print("Pass")
        print("Damage\t: {}d{} +{}".format(N, X, C))
        total = 0
        print("Result\t: ", end = " ")
        for _ in range(int(N)):
            temp = random.randint(1, int(X))
            print(temp, end = " ")
            total += temp
        print("\nTotal: {}".format(total+int(C)))

    print()
    cont = input('Enter "NO" to quit, press enter to
continue...').upper()

```