PRELIMINARY EXAMINATION 2019
SECONDARY FOUR EXPRESS
COMPUTING PAPER 2

Marking Scheme

Task 1		**/ 10**
Task 2		**/ 10**
Task 3		**/ 10**
Task 4		**/ 20**
Total		**/ 50**

Task 1

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	A	B	C	D	E	F	G
1	**Loans**						
2	Account number	Loan type	Loan Amount	Loan Tenure (Years)	Interest rate per annum	Processing Fee ($)	Monthly Instalment
3	1001Car	Car	10000	4	0.0388	100	$225.25
4	1002Cash	Cash	7000	2	0.037	0	$303.04
5	1003Study	Study	5500	2	0.037	0	$238.10
6	1004Study	Study	11500	4	0.0388	115	$259.04
7	1005Car	Car	5500	5	0.045	110	$102.54
8	1006Study	Study	7000	5	0.045	140	$130.50
9	1007Study	Study	10000	5	0.045	200	$186.43
10	1008Cash	Cash	55000	2	0.037	0	$2,381.03
11	1009Study	Study	5000	3	0.0388	50	$147.35
12	1010Study	Study	5000	5	0.045	100	$93.22
13	1011Cash	Cash	10000	3	0.0388	100	$294.71
14	1012Cash	Cash	12000	4	0.0388	120	$270.30
15	1013Car	Car	13000	5	0.045	260	$242.36
16	1014Cash	Cash	25000	5	0.045	500	$466.08
17	1015Cash	Cash	10000	4	0.0388	100	$225.25
18	1016Cash	Cash	40000	2	0.037	0	$1,731.66
19	1017Study	Study	10000	1	0.037	0	$850.13
20							
21	**Rates**					**Loan Types**	
22	Tenure (Years)	1	3	5		Car	3
23	Interest rate per annum	3.70%	3.88%	4.50%		Cash	7
24	Processing Fee	0%	1%	2%		Study	7

Formula view

	A	B	C	D	E	F	G
1	**Loans**						
2	Account number	Loan type	Loan Amount	Loan Tenure (Years)	Interest rate per annum	Processing Fee ($)	Monthly Instalment
3	1001Car	=MID(A3,5,5)	10000	4	=HLOOKUP(D3,$A$22:$D$24,2,TRUE)	=HLOOKUP(D3,$A$22:$D$24,3,TRUE)*C3	=-PMT(E3/12,D3*12,C3,0)
4	1002Cash	=MID(A4,5,5)	7000	2	=HLOOKUP(D4,$A$22:$D$24,2,TRUE)	=HLOOKUP(D4,$A$22:$D$24,3,TRUE)*C4	=-PMT(E4/12,D4*12,C4,0)
5	1003Study	=MID(A5,5,5)	5500	2	=HLOOKUP(D5,$A$22:$D$24,2,TRUE)	=HLOOKUP(D5,$A$22:$D$24,3,TRUE)*C5	=-PMT(E5/12,D5*12,C5,0)
6	1004Study	=MID(A6,5,5)	11500	4	=HLOOKUP(D6,$A$22:$D$24,2,TRUE)	=HLOOKUP(D6,$A$22:$D$24,3,TRUE)*C6	=-PMT(E6/12,D6*12,C6,0)
7	1005Car	=MID(A7,5,5)	5500	5	=HLOOKUP(D7,$A$22:$D$24,2,TRUE)	=HLOOKUP(D7,$A$22:$D$24,3,TRUE)*C7	=-PMT(E7/12,D7*12,C7,0)
8	1006Study	=MID(A8,5,5)	7000	5	=HLOOKUP(D8,$A$22:$D$24,2,TRUE)	=HLOOKUP(D8,$A$22:$D$24,3,TRUE)*C8	=-PMT(E8/12,D8*12,C8,0)
9	1007Study	=MID(A9,5,5)	10000	5	=HLOOKUP(D9,$A$22:$D$24,2,TRUE)	=HLOOKUP(D9,$A$22:$D$24,3,TRUE)*C9	=-PMT(E9/12,D9*12,C9,0)
10	1008Cash	=MID(A10,5,5)	55000	2	=HLOOKUP(D10,$A$22:$D$24,2,TRUE)	=HLOOKUP(D10,$A$22:$D$24,3,TRUE)*C10	=-PMT(E10/12,D10*12,C10,0)
11	1009Study	=MID(A11,5,5)	5000	3	=HLOOKUP(D11,$A$22:$D$24,2,TRUE)	=HLOOKUP(D11,$A$22:$D$24,3,TRUE)*C11	=-PMT(E11/12,D11*12,C11,0)
12	1010Study	=MID(A12,5,5)	5000	5	=HLOOKUP(D12,$A$22:$D$24,2,TRUE)	=HLOOKUP(D12,$A$22:$D$24,3,TRUE)*C12	=-PMT(E12/12,D12*12,C12,0)
13	1011Cash	=MID(A13,5,5)	10000	3	=HLOOKUP(D13,$A$22:$D$24,2,TRUE)	=HLOOKUP(D13,$A$22:$D$24,3,TRUE)*C13	=-PMT(E13/12,D13*12,C13,0)
14	1012Cash	=MID(A14,5,5)	12000	4	=HLOOKUP(D14,$A$22:$D$24,2,TRUE)	=HLOOKUP(D14,$A$22:$D$24,3,TRUE)*C14	=-PMT(E14/12,D14*12,C14,0)
15	1013Car	=MID(A15,5,5)	13000	5	=HLOOKUP(D15,$A$22:$D$24,2,TRUE)	=HLOOKUP(D15,$A$22:$D$24,3,TRUE)*C15	=-PMT(E15/12,D15*12,C15,0)
16	1014Cash	=MID(A16,5,5)	25000	5	=HLOOKUP(D16,$A$22:$D$24,2,TRUE)	=HLOOKUP(D16,$A$22:$D$24,3,TRUE)*C16	=-PMT(E16/12,D16*12,C16,0)
17	1015Cash	=MID(A17,5,5)	10000	4	=HLOOKUP(D17,$A$22:$D$24,2,TRUE)	=HLOOKUP(D17,$A$22:$D$24,3,TRUE)*C17	=-PMT(E17/12,D17*12,C17,0)
18	1016Cash	=MID(A18,5,5)	40000	2	=HLOOKUP(D18,$A$22:$D$24,2,TRUE)	=HLOOKUP(D18,$A$22:$D$24,3,TRUE)*C18	=-PMT(E18/12,D18*12,C18,0)
19	1017Study	=MID(A19,5,5)	10000	1	=HLOOKUP(D19,$A$22:$D$24,2,TRUE)	=HLOOKUP(D19,$A$22:$D$24,3,TRUE)*C19	=-PMT(E19/12,D19*12,C19,0)
20							
21	**Rates**					**Loan Types**	
22	Tenure (Years)	1	3	5		Car	=COUNTIF($B$3:$B$19,F22)
23	Interest rate per annum	0.037	0.0388	0.045		Cash	=COUNTIF($B$3:$B$19,F23)
24	Processing Fee	0	0.01	0.02		Study	=COUNTIF($B$3:$B$19,F24)

Question	Answer	Marks
1	One mark for working top formula, One mark for the rest =MID(A3,5,5)	
2	One mark for working top formula, One mark for the rest =HLOOKUP(D3,$A$22:$D$24,2,TRUE)	
3	One mark for working top formula, One mark for the rest =HLOOKUP(D3,$A$22:$D$24,3,TRUE)*C3	
4	One mark for working top formula, One mark for the rest =-PMT(E3/12,D3*12,C3,0)	
5	One mark for working top formula, One mark for the rest =COUNTIF($B$3:$B$19,F22)	

Task 2: MYFACTORS

```
#6a - 1 mark for 2 changed to 5
for i in range(5):
#6b - 1 mark for a list is declared
    factors = []
    factor_count = 0
    number = int(input("Enter a number:"))
#6c - 1 mark for while loop with correct condition
#      1 mark for meaningful invalid message
#      1 mark for re-enter
    while number < 0:
        print("Number must be positive.")
        number = int(input("Enter a number:"))
    for i in range(1,number+1):
        if number%i==0:
            factor_count += 1
#6b - 1 mark for list updated, accept append method
            factors = factors + [i]
#6b - 1 mark for list output,
#      1 mark for meaningful message
    print("Factors for {} are {}".format(number, factors))
```

Task 2: MYFACTORS2

```
number = int(input("Enter a number:"))
#7 - 1 mark for loop with correct condition
while number != 0:
    factors = []
    factor_count = 0
    for i in range(1,number+1):
        if number%i==0:
            factor_count += 1
            factors = factors + [i]
    print("Factors for {} are {}".format(number, factors))
#7 - 1 mark for input again
    number = int(input("Enter a number:"))
```

Task 3: MYCHECKCODE

```
check = [2, 7, 6, 5, 4, 3, 2]
code = ["A","B","C","D","E","F","G","H","I","Z","J"]
total = 0
counter = 1
NRIC = input("Enter the NRIC:")
while NRIC.isalnum()== False or len(NRIC)!= 9:
    if NRIC.isalnum()== False:
        print("Special character is not allowed!")
    else:
        print("NRIC must be 9 digits")
    NRIC = input("Enter the NRIC again:")
while counter<len(NRIC)-1:
    for digit in check:
        total += digit * int(NRIC[counter])
        counter += 1
remainder = total%11
subtract = 11 - remainder
if NRIC[-1]==code[subtract-1]:
    print("The NRIC is valid.")
else:
    print("Invalid NRIC.")
```

Task 4:

Question	Answer	Marks

10	Max 10 marks from the following:
	- Input for **attendance** in correct format a b c d e
	- Correct condition for validation
	  ○ … check for **0 and 1**
	  ○ **…** use of while
	- Variable set up for **total number of days of present for each student**
	- Variable set up for **total attendance**
	- Use of loops for **seven students**
	- Correct calculation of the **total number of days of present for each student**
	- Correct calculation of the **total attendance**
	- Correct calculation of the **total possible attendance**
	- Correct calculation of the **present rate**
	- **Present rate** rounded to 1 decimal place	

11	3 marks for 11 lines of outputs (-1 mark for each kind of error) 2 marks for output matches stored program	
13	1 mark for correct test for present 2 mark for correct output (-1 mark for each line of error)	
12	2 marks for program working for any number of students (1 mark for allow input of number of students)	

Q11

```
Student 1         3 day(s)
Student 2         4 day(s)
Student 3         3 day(s)
Student 4         5 day(s)
Student 5         4 day(s)
Student 6         3 day(s)
Student 7         5 day(s)

Present rate = 77.1 %

Student 4 has full attendance
Student 7 has full attendance
>>>
```