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**Solution de Contrôle de 1<sup>er</sup> Semestre**

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**Exercice 1: (05 pts)**

Avec pipeline  $t = 20N$                                   1.5 pts  
 Sans pipeline  $t = 8N + 4$                                 3.5 pts

**Exercice 2: (07 pts)**

1000 bgt \$s1,\$s2, 3  
 1004 add \$s3,\$s3,\$s1  
 1008 addi \$s1,\$s1,1  
 1012 j 253    / ou j 250  
 1016 exit:

1E ??0003    1.5 pts  
 02 ???020    1.5 pts  
 22 ??0001    1.5 pts  
 080000FD/FF/EA                                    1.5 pts  
 Exit = 3     0.5 pt  
 Loop = 253/250                                        0.5 pt

**Exercice 3: (08 pts)**

01 pt pour les mots clés

```
.data
str1: .asciiz "Entrez l'entiers n :\n"          0.25*2
str4: .asciiz "Le Somme des chiffres est : "
.text
.globl main
main:
loop1:
la $a0,str1      0.25
li $v0,4
syscall
li $v0,5         0.25
syscall
move $s1,$v0
bgt $s1,9999,loop1  01
blt $s1,1,loop1

li $s4,1000
li $s2,100
li $s3,10

div $s1,$s4      01.5 pt
mflo $t1
mfhi $t2

div $t1,$s2      01.5 pt
mflo $t3
```

```
mfhi $t4
```

```
add $s7,$t2, $t4
```

```
div $t3,$s3      01.5 pt
```

```
mflo $t5
```

```
mfhi $t6
```

```
add $s7,$s7, $t6
```

```
la $a0,str4
```

```
li $v0,4
```

```
syscall
```

```
move $a0, $s7      1.5 pts
```

```
li $v0, 1
```

```
syscall
```

```
li $v0, 10
```

```
syscall
```

```
.end main
```