

Answer Key

Exercise 1 (08 pts : 02+ 01 + 02)

A

1. Possible values of X and Y : X = 0, 1, 2 et Y = 0, 1, 2
2. Use One semaphore S init to 1

Process P1

Wait(S)

X := X + 1

Y := Y + 1

Signal(S)

Display (X, Y)

Process P2

Wait(S)

X := X * 2

Y := Y * 2

Signal(S)

Display (X, Y)

B 1. SA <- 1, SB, SC, SD <- 0

Process_A

Wait(SA)

Display (A)

Signal(SB)

Signal(SC)

Process_B

Wait(SB)

Display (B)

Signal(SD)

Process_A

Wait(SC)

Display (A)

Signal(SD)

Process_A

Wait(SD)

Wait(SD)

Display (A)

Signal(SA)

2 SA <- 1, SBC, SD <- 0

Process_A

Wait(SA)

Display (A)

Signal(SBC)

Process_B

Wait(SBC)

Display (B)

Signal(SD)

Process_A

Wait(SBC)

Display (A)

Signal(SD)

Process_A

Wait(SD)

Display (A)

Signal(SA)

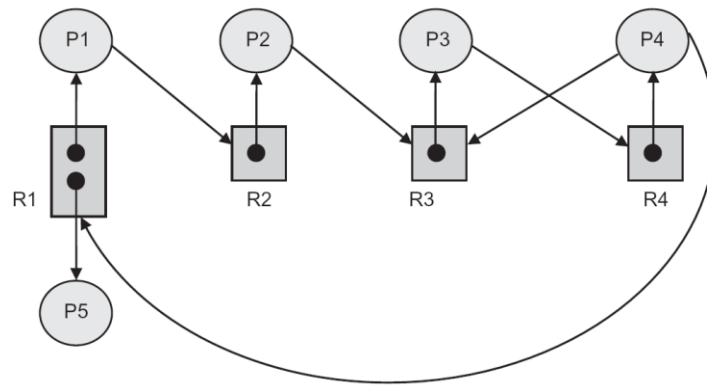
Exercise 02 (06 pts)

```
#include <stdio.h>
#include <signal.h>
```

```
void fonct1() {printf("Premier SIGINT capturé");
               signal(SIGINT, fonct2);}
```

```
void fonct2() { printf("Autres SIGINT capturés ");
               signal(SIGINT, SIG_IGN);}
```

```
void main ( ) {
    signal (SIGINT, fonct1) ;
    while (1) pause();
}
```

Exercise 03 (06 pts)1 (Example) **02 pts**2 **03 pts** $Available = (0, 0, 0, 0)$

Processus	Allocation (R_0, R_1, R_2, R_3)	Max (R_0, R_1, R_2, R_3)	Need (R_0, R_1, R_2, R_3)
P_0	(1, 0, 0, 0)	(1, 1, 0, 0)	(0, 1, 0, 0)
P_1	(0, 1, 0, 0)	(0, 1, 1, 0)	(0, 0, 1, 0)
P_2	(0, 0, 1, 0)	(0, 0, 1, 1)	(0, 0, 0, 1)
P_3	(0, 0, 0, 1)	(1, 0, 0, 1)	(1, 0, 0, 0)