15, January 2024 | *Computer science Pratical Test - S1* | *Duration : 50min*

Full Name : *Section/Group :*

Exercise 1 : (2.5pts)

Give the display of this program :

```
#include <stdio.h>
#include <math.h>
int main () { int a=1, b=3, c;
c=pow (b, 2) - a ;

printf("%d\n", pow(b, 2) – a) ;

printf("%d%d  %d", a,    b, c);

printf("\n  a=%db=%d  c=a+b\n", a, b) ;
return 0;    }
```

Exercise 2 : (6pts)

```
#include <stdio.h>
int main ()   {
int i, j, prime, T[]={4, 8, 7, 14, 11};
for (i=1; i<=5; i++)
prime=1;
for (j=2; j<=i/2; i++)
if (i/j==0)
prime=0;
break;
if (prime==0)      printf("%d,", t[i]);
return 0;
```

1) The previous program is designed to display all prime elements from an array T. Correct this program.

Note : The code in **bold** is correct.

2) Make the minimum modifications to the previous code so that it displays only the **first prime element of T** if it exists. If **T** doesn't contain any prime element, it displays "**There is no prime elements in T**".

Solution :

1)

```
#include <stdio.h>
int main ()   {
int i, j, prime, T[]={4, 8, 7, 14, 11};
```

.....

.....

.....

.....

.....

2)
```
#include <stdio.h>
int main ()   {
int i, j, prime, T[]={4, 8, 7, 14, 11};
```

Exercise 3 : (3pts)

Give the display of this program :

```
#include <stdio.h>
int main ()  {  int i = 0;
while (i <10)   {
  switch (i)  {
    case 0 : i += 1;    break ;
    case 2 : i += 2;    break ;
    case 5 : i += 3;
    default : i += 4;   break ;
  }
  printf("%d  ", i);
  i++;
}
return 0;     }
```

Exercise 4 : (3.5pts)

Let the following code :

```
int i, j, T[4];
for (i=0; i<4 ; i++)   {
     do {
          printf(”Enter T[%d]:", i+1);
          scanf(“%d”, &T[i]);
     } while (! (T[i]>=0 && T[i]<10));
}
```

```
for (i=0; i<4; i++)   {
     for (j=0; j<=i; j++)
          printf("%d  ", T[j]);
     printf("\n");    }
```

1) What is the role of the **do while** loop in this code.

2) Give the display of the code inside the **rectangle** if the user enters : 4, 3, 2, 1

Solution :

1).....

.....

.....

2) The display :