

Corrigé de l'examen de rattrapage

Exercice 1 (8pts)

$$(1245)_{16} = 5 \cdot 16^0 + 4 \cdot 16^1 + 2 \cdot 16^2 + 1 \cdot 16^3 = 5 + 64 + 512 + 4096 = (4677)_{10} \quad (1pt)$$

$$(1235,25)_{10} = (5415,13)_6$$

$$\begin{array}{r} 1235 \mid _6 _ \\ 5 \quad 205 \mid _6 _ \\ \quad 1 \quad 34 \mid _6 _ \quad (1pt) \\ \quad \quad 4 \quad 5 \mid _6 _ \\ \quad \quad \quad 5 \quad 0 \end{array}$$

$$0,25 \cdot 6 = 1.5$$

$$0.5 \cdot 6 = 3 \quad (1pt)$$

En utilisant la méthode directe :

$$(11 \ 10 \ 11 \ 01, 01 \ 00 \ 11 \ 01)_2 = (3231, 1031)_4 \quad (1pt)$$

$$(011 \ 101 \ 101, 010 \ 011 \ 010)_2 = (355, 232)_8 \quad (1pt)$$

$$(1110 \ 1101, 0100 \ 1101)_2 = (ED, 4D)_{16} \quad (1pt)$$

$$(12245)_6 = (5222)_7$$

$$(12245)_6 = 5 \cdot 6^0 + 4 \cdot 6^1 + 2 \cdot 6^2 + 2 \cdot 6^3 + 1 \cdot 6^4 = 5 + 24 + 72 + 432 + 1296 = (1829)_{10} \quad (1pt)$$

$$\begin{array}{r} 1829 \mid _7 _ \\ 2 \quad 261 \mid _7 _ \\ \quad 2 \quad 37 \mid _7 _ \quad (1pt) \\ \quad \quad 2 \quad 5 \mid _7 _ \\ \quad \quad \quad 5 \quad 0 \end{array}$$

Exercice 2 (6pts)

Program ex2 ;	
Var	
nb, mt : integer ;	0.5 pt
begin	
Write('Donner le nombre de photocopies') ;	1 pt
Read(nb) ;	
If (nb<=10) then	1 pt
mt←nb*5	
else	1.5 pt
if (nb<=30) then	
mt←10*5+ (nb-10)*3	
else	1.5 pt
mt← 10*5+20*3+(nb-30)*2;	
write('Le montant de la facture=', mt);	0.5 pt
end.	

Exercice 3 (6pts)

Program ex3 ;	
Var	
nbh, nbm, nbs : integer ;	0.75
begin	
Write('Donner le nombre d''heures') ;	0.5
Read(nbh) ;	
Write('Donner le nombre de minutes ') ;	0.5
Read(nbm) ;	
If(nbh<0 or nbm<0) then	0.75
Write('Erreur')	0.5
Else	0.5
Begin	0.5
Nbs ← nbh*3600+nbm*60;	1
Write('La durée en seconds =', nbs);	0.5
End ;	0.5
End.	