BACS1024 - RDS2(S1)G3 - Tutorial

Q1a&b	Lee Jun Xian **a) Convert $3D7_{16}$ to binary, octal and decimal respectively** 1 a) $3D7_{16}$ = 11 1101 0111$_2$ = 1727$_8$ = 983$_{10}$ → 2+2+1m (missing working for Base 10) WOrking = 1m Final answer = 1m **b) Convert 1100010100100001_2 to octal, decimal and hexadecimal respectively** b) 1100 0101 0010 0001$_2$ = C521$_{16}$ = 142441$_8$ = 50465$_{10}$ → 2+2+1m (missing working for Base 10)

Q1c&d	Leong Yit Wee
	
	c) **Convert 7098_{10} to binary, octal and hexadecimal respectively**
	1c) 7098(10) = 1 1011 1011 1010 B → 1m (missing working)
	          = 15672(8) → 2m
	        = 1BBA H → 2m
	
	d) **Convert 13612_8 to binary, decimal and hexadecimal respectively**
	1d)13612(8) = 1 0111 1000 1010 B → 2m
	          = 6026(10) → 1m (missing working)
	        = 178A H → 2m

Q1e&Q 2a	Lim Chia Chung
	1 e) Convert 210102_3 to decimal
	
	 $210102_3 = 578_{10}$ → *1m (missing working)*
	2 a) $1011_2 + 1111_2$
	
	   101 1$_2$
	  + 111$_1$1$_2$
	$= (1)1010_2$ → *2m*

Q2b&c	**$715_8 - 57_8$ → 2m**

$$2(b) \ 715_8 - 57_8 = 636_8 \ \#$$

$$6 \overset{8\,0}{\cancel{7}} \overset{13}{\cancel{1}} \overset{}{\cancel{5}}_8$$

$$- \ 57_8$$

$$636_8$$

C521H x 3DH → *2m*

$$2(c) \ C521H \times 3DH = 2EF8DD_{16} \ \#$$

$$\overset{1\,4}{C}\overset{1}{5}21$$

$$\times \quad 3D$$

$$A02AD$$

$$24F63$$

$$2EF8DD$$

$16\,\underline{|26}$ $16\,\underline{|160}$
$1-10$ $10-0$

$16\,\underline{|66}$ $16\,\underline{|36}$
$4-2$ $2-4$

Q3a&b

LIM MING JUN
a.) $101101101_2 + 10011011_2 + 10010011_2$
b.) $1FF9_{16} + AC_{16}$

$- \quad F3BB \ H$
$ 6cF00 \ H$

Q3. (a) $1\,0110\,1101_2$ (b) $1FF9 \ H$
$0\,1001\,1011_2$ $+ \quad AC \ H$
$+ \ 0\,1001\,0011_2$ $20A5 \ H$
$1\,0100\,1011_2$

Q3c&d	Lim Yih Feng **c.) $7702_8 - 577_8$** **d.) $2A6_{12} - 2A_{12}$**
	Q3(c) $7702_8 - 577_8$ $7702_8 = (8^3 \times 7) + (8^2 \times 7) + (8^1 \times 0) + (8^0 \times 2)$ $\qquad = 4034_{10}$ $577_8 = (8^2 \times 5) + (8^1 \times 7) + (8^0 \times 7)$ $\qquad = 383_{10}$ $\begin{array}{r} 4034 \\ -\ 383 \\ \hline 3651 \end{array}$ $\begin{array}{r} 8\,\underline{|\,3651} \\ 8\,\underline{|\,456} \cdots 3 \\ 8\,\underline{|\,57} \cdots 0 \\ 8\,\underline{|\,7} \cdots 1 \\ 7 \end{array}$ $\therefore 7702_8 - 577_8 = 7103_8$ $\begin{array}{r} 7702 \\ -\ \ 577 \\ \hline 7103 \end{array}$

(Q3(d)

$2A6_{12} - 2A_{12}$

$2A6_{12} = (12^2 \times 2) + (12^1 \times 10) + (12^0 \times 6)$

$= 414_{10}$

$2A_{12} = (12^1 \times 2) + (12^0 \times 10)$

$= 34_{10}$

$\begin{array}{r} 414 \\ -\ 34 \\ \hline 380 \end{array}$

$\begin{array}{r} 12\,|\,380 \\ 12\,|\,31\ \cdots\ 8 \\ 12\,|\,2\ \cdots\ 7 \\ 2 \end{array}$

$\therefore 2A6_{12} - 2A_{12} = 278_{12}$

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   2A6
-   2A
   27 8
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Q4	Ong T'nsam
	a) $1101_2 \times 1011_2 \times 11_2$ **b) $3175_5 \times 4_5$** a) 110101101

4) a)

$$1101_2$$
$$\times\ 1011_2$$

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     1101
    .1101
   ,0000
  |1101
 |10001111₂
```

$$1000111_2$$
$$\times\ 11_2$$

```
  1000,1,111
  10001111
 110101101₂
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b) Illogical because the data range for base 5 is 0,1,2,3,4, so the number should not be more than or equal to 5.

-3175(number 7 more than 5; number 5 equals to 5)