Comp 3711 A6

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Q1:

A → 12kB   B → 10kB   C → 9kB

a. first fit   b. best fit   c. worst fit   d. next fit

	a. first fit	b. best fit	c. worst fit	d. next fit
10kB	B	B		
4kB				
20kB	A		A	A
13kB	C		B	B
7kB				
9kB		C		C
11kB		A		
15kB			C	

∴ best fit is the best algorithm

Q2:

a) Virtual pages = $2^{16} \div 2^{12} = 16$
   physical pages = $2^{15} \div 2^{12} = 8$

b) number of pages of 32 bit address = $2^{32} \div 2^{12} = 2^{20}$
   page size = $2^{20} \times 4 = 2^{20+2} = 2^{22}$

	first-fit	best-fit	worst-fit

Q3) 6kB

17kB   13kB

~~7kB~~   13kB

14kB   13kB

19kB

Q4) logical address bits

= total number of page + page offset

$= 3(2^2) + 10(2^{10}) = 13$

physical address bits

= physical memory frame + page offset

$= 5(2^5) + 10(2^{10})$

$= 15$

Q5) i) 12 < 512   page fault

ii) $121 = (2 \times 512) + \text{offset}$ offset $= 97$

     physical address $= (1 \times 512) + 97 = 609$

iii) $2049 = (4 \times 512) + \text{offset}$ offset $= 451$

     physical address $= (8 \times 512) + 451 = 4547$

Q6:

a) $21| +430 = 64| < 21|+600 = 81|$ correct

b) $2300 +10 = 2310 < 2300 +14 = 2314$ correct

c) $90 + 100 = 590 > 90 + 100 = 190$ not correct

d) $1327 +400 = 1727 < 1327 +580 = 1907$ correct

e) $1952 + 112 = 2064 > 1952 +96 = 2048$ not correct

Q7:

a)

1	2	8	3	4	2	1	5	6	2	1	3	7	6	3
1	1	1	1	4	4	4	4	6	6	6	6	7	7	7
	2	2	2	2	2	2	2	2	2	2	2	2	6	6
		8	8	8	8	1	1	1	1	1	1	1	1	1
			3	3	3	3	5	5	5	5	3	3	3	3
X	X	X	X	X	✓	X	X	X	✓	✓	X	X	X	✓

Total page fault = 11

b)

1	2	8	3	4	2	1	5	6	2	1	3	7	6	3
1	1	1	1	4	4	4	4	4	2	2	2	2	2	2
	2	2	2	2	2	1	1	1	1	3	3	3	3	
		8	8	8	8	8	5	5	5	5	5	7	7	7
			3	3	3	3	3	6	6	6	6	6	6	6
X	X	X	X	X	✓	X	X	X	✓	X	X	✓	✓	

Total page fault = 11

1	2	8	3	4	2	1	5	6	2	1	3	7	6	3
1	1	1	1	1	1		1	1	1	1	1	7	7	7
		2	2	2	2	2	2	2	2	2	2	2	2	2
			8	8	4	4	4	5	6	6	6	6	6	6
				3	3	3	3	3	3	3	3	3	3	3
x	x	x	x	x	✓	✓	x	x	✓	✓	✓	x	✓	✓

Total page fault = 8