

MIDTERM TEST FOR Semester 1, AY2022/23

CS2040 – Data Structures and Algorithms

ANSWER SHEET

STUDENT NUMBER									
A									
U	<input type="radio"/>	0	0	0	0	0	0	0	0
A	<input checked="" type="radio"/>	1	1	1	1	1	1	1	1
HT	<input type="radio"/>	2	2	2	2	2	2	2	2
NT	<input type="radio"/>	3	3	3	3	3	3	3	3
		4	4	4	4	4	4	4	4
		5	5	5	5	5	5	5	5
		6	6	6	6	6	6	6	6
		7	7	7	7	7	7	7	7
		8	8	8	8	8	8	8	8
		9	9	9	9	9	9	9	9

Q1a [2]

<input type="radio"/> True	<input type="radio"/> False
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Q1b [2]

<input type="radio"/> True	<input type="radio"/> False
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Q2a [2]

<input type="radio"/> $O(\log(\log(N)))$	<input type="radio"/> $O(\log(N))$	<input type="radio"/> $O(\sqrt{N})$	<input type="radio"/> $O(\sqrt{N}\log(N))$	<input type="radio"/> $O(N)$	<input type="radio"/> $O(N \log(N))$
<input type="radio"/> $O(N^{1.5})$	<input type="radio"/> $O(N^{1.5} \log(N))$	<input type="radio"/> $O(N^2)$	<input type="radio"/> $O(N^2 \log(N))$	<input type="radio"/> $O(2^N)$	<input type="radio"/> $O(N!)$

Q2b [2]

<input type="radio"/> $O(\log(\log(N)))$	<input type="radio"/> $O(\log(N))$	<input type="radio"/> $O(\sqrt{N})$	<input type="radio"/> $O(\sqrt{N}\log(N))$	<input type="radio"/> $O(N)$	<input type="radio"/> $O(N \log(N))$
<input type="radio"/> $O(N^{1.5})$	<input type="radio"/> $O(N^{1.5} \log(N))$	<input type="radio"/> $O(N^2)$	<input type="radio"/> $O(N^2 \log(N))$	<input type="radio"/> $O(2^N)$	<input type="radio"/> $O(N!)$

Q2c [2]

<input type="radio"/> $O(\log(\log(N)))$	<input type="radio"/> $O(\log(N))$	<input type="radio"/> $O(\sqrt{N})$	<input type="radio"/> $O(\sqrt{N}\log(N))$	<input type="radio"/> $O(N)$	<input type="radio"/> $O(N \log(N))$
<input type="radio"/> $O(N^{1.5})$	<input type="radio"/> $O(N^{1.5} \log(N))$	<input type="radio"/> $O(N^2)$	<input type="radio"/> $O(N^2 \log(N))$	<input type="radio"/> $O(2^N)$	<input type="radio"/> $O(N!)$

Q2d [2]

<input type="radio"/> $O(\log(\log(N)))$	<input type="radio"/> $O(\log(N))$	<input type="radio"/> $O(\sqrt{N})$	<input type="radio"/> $O(\sqrt{N}\log(N))$	<input type="radio"/> $O(N)$	<input type="radio"/> $O(N \log(N))$
<input type="radio"/> $O(N^{1.5})$	<input type="radio"/> $O(N^{1.5} \log(N))$	<input type="radio"/> $O(N^2)$	<input type="radio"/> $O(N^2 \log(N))$	<input type="radio"/> $O(2^N)$	<input type="radio"/> $O(N!)$

Q2e [2]

<input type="radio"/> $O(\log(\log(N)))$	<input type="radio"/> $O(\log(N))$	<input type="radio"/> $O(\sqrt{N})$	<input type="radio"/> $O(\sqrt{N}\log(N))$	<input type="radio"/> $O(N)$	<input type="radio"/> $O(N \log(N))$
<input type="radio"/> $O(N^{1.5})$	<input type="radio"/> $O(N^{1.5} \log(N))$	<input type="radio"/> $O(N^2)$	<input type="radio"/> $O(N^2 \log(N))$	<input type="radio"/> $O(2^N)$	<input type="radio"/> $O(N!)$

Q2f [2]

<input type="radio"/> $O(\log(\log(N)))$	<input type="radio"/> $O(\log(N))$	<input type="radio"/> $O(\sqrt{N})$	<input type="radio"/> $O(\sqrt{N}\log(N))$	<input type="radio"/> $O(N)$	<input type="radio"/> $O(N \log(N))$
<input type="radio"/> $O(N^{1.5})$	<input type="radio"/> $O(N^{1.5} \log(N))$	<input type="radio"/> $O(N^2)$	<input type="radio"/> $O(N^2 \log(N))$	<input type="radio"/> $O(2^N)$	<input type="radio"/> $O(N!)$

Q2g [2]

<input type="radio"/> $O(\log(\log(N)))$	<input type="radio"/> $O(\log(N))$	<input type="radio"/> $O(\sqrt{N})$	<input type="radio"/> $O(\sqrt{N}\log(N))$	<input type="radio"/> $O(N)$	<input type="radio"/> $O(N \log(N))$
<input type="radio"/> $O(N^{1.5})$	<input type="radio"/> $O(N^{1.5} \log(N))$	<input type="radio"/> $O(N^2)$	<input type="radio"/> $O(N^2 \log(N))$	<input type="radio"/> $O(2^N)$	<input type="radio"/> $O(N!)$

Q3a [5]

<input type="radio"/> 2 BLLs	<input type="radio"/> 1 BLL + 1 TLL	<input type="radio"/> 2 TLLs	<input type="radio"/> 1 TLL + 1 DLL	<input type="radio"/> 2 DLLs	<input type="radio"/> 1 TLL + 2 DLLs
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Q3b [5]

<input type="radio"/> 2 S	<input type="radio"/> 1 S + 1 Q	<input type="radio"/> 2 Q	<input type="radio"/> 2 S + 1 Q	<input type="radio"/> 1 S + 2 Q	<input type="radio"/> 2 S + 2 Q
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Q4 [9] ...

Leave unshaded if code snippet does NOT correctly solve any problem

Q4A

<input type="radio"/> P1	<input type="radio"/> P2	<input type="radio"/> P3
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Q4B

<input type="radio"/> P1	<input type="radio"/> P2	<input type="radio"/> P3
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Q4C

<input type="radio"/> P1	<input type="radio"/> P2	<input type="radio"/> P3
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Q4D

<input type="radio"/> P1	<input type="radio"/> P2	<input type="radio"/> P3
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Q5 [8 + 3?]