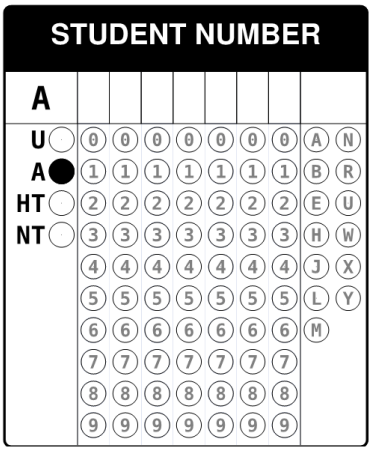
MIDTERM TEST FOR Semester 1, AY2022/23

CS2040 – Data Structures and Algorithms

ANSWER SHEET



Q1a [2]

◯ True	◯ False

Q1b [2]

◯ True	◯ False

Q2a [2]

◯ O(log(log(N))	◯ O(log(N))	◯ O($\sqrt{N}$)	◯ O($\sqrt{N}$log(N))	◯ O(N)	◯ O(N log(N))
◯ O($N^{1.5}$)	◯ O($N^{1.5}$ log(N))	◯ O(N^2)	◯ O(N^2 log(N))	◯ O(2^N)	◯ O(N!)

Q2b [2]

◯ O(log(log(N))	◯ O(log(N))	◯ O($\sqrt{N}$)	◯ O($\sqrt{N}$log(N))	◯ O(N)	◯ O(N log(N))
◯ O($N^{1.5}$)	◯ O($N^{1.5}$ log(N))	◯ O(N^2)	◯ O(N^2 log(N))	◯ O(2^N)	◯ O(N!)

Q2c [2]

◯ O(log(log(N))	◯ O(log(N))	◯ O($\sqrt{N}$)	◯ O($\sqrt{N}$log(N))	◯ O(N)	◯ O(N log(N))
◯ O($N^{1.5}$)	◯ O($N^{1.5}$ log(N))	◯ O(N^2)	◯ O(N^2 log(N))	◯ O(2^N)	◯ O(N!)

Q2d [2]

◯ O(log(log(N))	◯ O(log(N))	◯ O($\sqrt{N}$)	◯ O($\sqrt{N}$log(N))	◯ O(N)	◯ O(N log(N))
◯ O($N^{1.5}$)	◯ O($N^{1.5}$ log(N))	◯ O(N^2)	◯ O(N^2 log(N))	◯ O(2^N)	◯ O(N!)

Q2e [2]

◯ O(log(log(N))	◯ O(log(N))	◯ O($\sqrt{N}$)	◯ O($\sqrt{N}$log(N))	◯ O(N)	◯ O(N log(N))
◯ O($N^{1.5}$)	◯ O($N^{1.5}$ log(N))	◯ O(N^2)	◯ O(N^2 log(N))	◯ O(2^N)	◯ O(N!)

Q2f [2]

◯ O(log(log(N))	◯ O(log(N))	◯ O($\sqrt{N}$)	◯ O($\sqrt{N}$log(N))	◯ O(N)	◯ O(N log(N))
◯ O($N^{1.5}$)	◯ O($N^{1.5}$ log(N))	◯ O(N^2)	◯ O(N^2 log(N))	◯ O(2^N)	◯ O(N!)

Q2g [2]

◯ O(log(log(N))	◯ O(log(N))	◯ O($\sqrt{N}$)	◯ O($\sqrt{N}$log(N))	◯ O(N)	◯ O(N log(N))
◯ O($N^{1.5}$)	◯ O($N^{1.5}$ log(N))	◯ O(N^2)	◯ O(N^2 log(N))	◯ O(2^N)	◯ O(N!)

Q3a [5]

◯ 2 Cats	◯ 1 Cat +1 Dog	◯ 2 Dogs	◯ 1Dog +1Cow	◯ 2 Cows	◯ 1 Dog + 2Cows

Q3b [5]

◯ 2 R	◯ 1 R + 1 W	◯ 2 W	◯ 2 R + 1 W	◯ 1 R + 2W	◯ 2 R + 2 W

Q4 [9] … Leave unshaded if code snippet does NOT correctly solve any problem

Q4A			**Q4B**			**Q4C**			**Q4D**		
◯ P1	◯ P2	◯ P3	◯ P1	◯ P2	◯ P3	◯ P1	◯ P2	◯ P3	◯ P1	◯ P2	◯ P3

Q5 [8 + 3?]