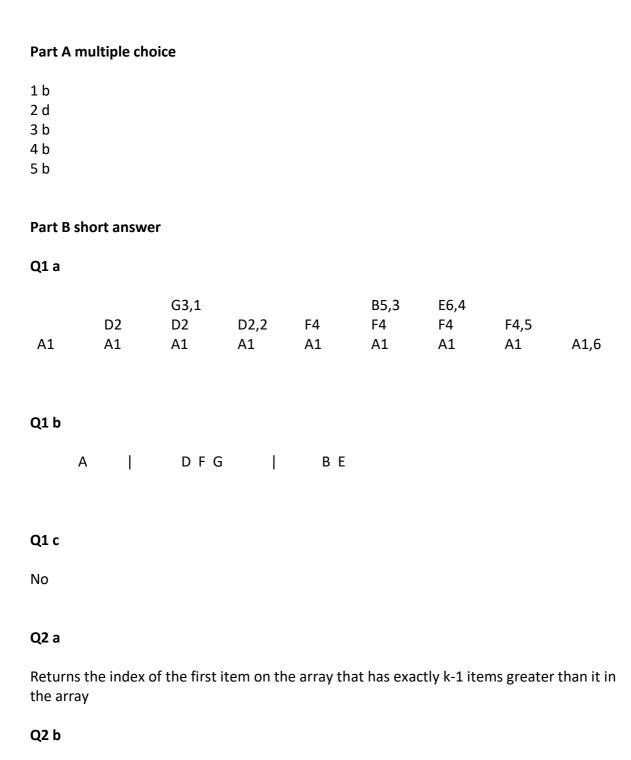
Sample Exam Questions (Weeks 1-5) Solutions

 $O(n^2)$



Q3

$$C(n) = 3C(n-1) \ n > 1$$

$$C(1) = 4$$

Telescoping / repeated substitution results in

$$C(n) = 3^{i} C(n-i)$$

Note: steps omitted from sample solution

Let i=n-1

$$C(n) = 3^{(n-1)} C(1)$$

 $C(n) = 4/3 . 3^n$

$$C(n) = 4/3 . 3^n$$

Thus O(3ⁿ)