

Last name	
First name	
Group	

Grade	
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Algorithmics
Undergraduate 2nd year - S3#
Midterm #3 (C3)
10 mars 2020 - 14h45
Answer Sheets

1	
2	
3	
4	
5	

Answers 1 (Hashing – 3 points)

1. Linear probing ($d = 3$) :

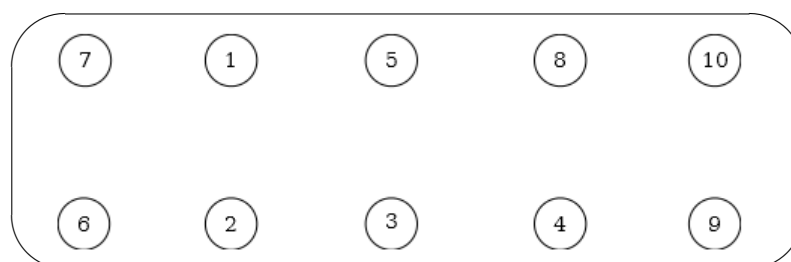
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

2. hashing with separate chaining:

0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Answers 2 (Draw to win – 2 points)

1. Draw the digraph G:



2. indegree

1	2	3	4	5	6	7	8	9	10

Answers 3 (Equality – 5 points)

Specifications: The function `same(T , B)` tests whether T , a general tree in "classical" representation, and B , a general tree in *first child - right sibling* representation, are identical.

This image shows a full page of blank graph paper. The grid consists of small, equal-sized squares formed by thin black lines. There are 20 columns and 20 rows of squares, creating a total of 400 square units. The grid covers the entire area of the page, leaving no margins or other markings.

Answers 4 (B-tree measures – 4 points)

Specifications:

`occupation(B)` returns average number of keys per node of the B-tree B .

This image shows a full page of blank graph paper. The grid consists of thin, light gray horizontal and vertical lines that intersect to form small squares across the entire surface. There are no margins, text, or other markings on the paper.

Answers 5 (B-trees: Minimum deletion – 6 points)

1. Degree =
2. *Tree after deletion of 3:*

2. Specifications:

The function `__delmin(B)` deletes and returns the minimum value of the non empty B-tree B .

[illegible]