## Exercise sheet 6: BLAST

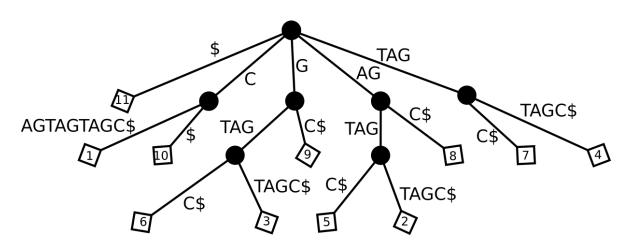
### Exercise 1

You are given the text T = CAGTAGTAGC

Question 1A Draw the corresponding suffix tree

### Solution

# **CAGTAGTAGC**



**Question 1B** Describe the steps of a counting query for P = TAG

#### Solution

- start at root node
- locate outgoing edge that starts with T
- match subsequent characters of the pattern
- in the subtree rooted at  $\overline{TAG}$  count the number of leaves  $\Rightarrow 2$

## **Question 1C** Describe the steps of a reporting query for P = AG

### Solution

- start at root node
- locate outgoing edge that start with A
- $\bullet\,$  match subsequent characters of the pattern
- in the subtree rooted at  $\overline{AG}$  report the labels of all leaves  $\Rightarrow \{2, 5, 8\}$