# COMP9319 Exercises

**Solution :** To be released one week later

## Question 1

Adaptive Huffman Coding (Vitter's) is used to encode a string with a vocabulary of three letters a, b, c.

The initial coding before any transmission is: a=01100001, b=01100010, c=01100011.

Derive the encoded bitstream produced by the encoder for the string **abcbaaa**. Draw the adaptive Huffman trees after each letter is processed.

## Question 2

Adaptive Huffman Coding (Vitter's) is used to encode a string with a vocabulary of three letters a, b, c.

The initial coding before any transmission is: a=01100001, b=01100010, c=01100011.

Derive the encoded bitstream produced by the encoder for the string **bcaaabbb**.

## Question 3

Given an Adaptive Huffman (Vitter's) encoded bitstream: **0110000100110001001111101** (Looks familiar?)

The initial coding before any transmission is: a=01100001, b=01100010.

Derive its corresponding decoded message (i.e., the output produced by its corresponding decoder).