**CS2106 Introduction to Operating Systems**

**Lab 4**

**Contiguous Memory Allocation**

**Answer Book**

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Question 3.1a (1 mark)

8 bytes (64 units to allocate [64 / 1] which corresponds to 64 bits and hence 8 bytes [64 / 8] as 1 byte is 8 bits)

Question 3.1b (1 marks)

1088 bytes (64 units to allocate [64 / 1] in the worst case which corresponds to 64 nodes and hence 1088 bytes [64 \* (4 + 4 + 4 + 4 + 1)])

Question 3.1c (1 marks)

Advantage: Save memory for the same number of units as each unit is represented by a single bit.

Disadvantage: Cannot contain more information than free/not free per unit as each unit is only represented by a single bit.

Question 3.2 (1 mark)

No, it would not make a difference as both char and unsigned char are 1 byte (8 bits) in size and the difference between the range of values which they can represent does not affect the amount of information that can be stored within them.

Question 3.3 (1 mark)

Question 4.1 (1 mark)

Question 4.2 (1 mark)

Question 4.3 (1 mark)

Question 4.4 (1 marks)

Question 5.1a (1 marks)

Question 5.1b (1 marks)

Question 5.2 (1 marks)

Question 5.3 (2 marks)

**TOTAL: \_\_\_\_\_\_\_\_\_\_\_ / 14**