## 香港中文大學 The Chinese University of Hong Kong

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## Course Examinations 2nd Term, 2010-11

| Course Code & Title | : | : CSCI2100B Data Structures |           |  |
|---------------------|---|-----------------------------|-----------|--|
| Time allowed        | : | hours                       | 0 minutes |  |
| Student I.D. No.    | : |                             | Seat No.: |  |
|                     |   |                             |           |  |

Answer **ALL** questions. Full mark is **100**.

Please answer every question in a new page of the answer book provided.

Express your answer in English, mathematical expressions, or with diagrams; but  ${\bf NOT}$  C code snippets unless you are asked to do so.

An ASCII table is provided at the last page of this question paper.

| Page | Question | Topic  | Marks |
|------|----------|--|-------|
| 2    | 1        | Big-O notation and algorithm analysis        | 10    |
| 3    | 2        | Sorting algorithms                           | 10    |
| 4    | 3        | Linked List / Stack / Queue                  | 10    |
| 5    | 4        | Hashing & Hash Tables                        | 10    |
| 6    | 5        | Binary Search Tree (BST)                     | 10    |
| 7    | 6        | AVL Tree                                     | 10    |
| 7    | 7        | Binary Heap                                  | 10    |
| 8    | 8        | Graph: Representation & Traversal            | 10    |
| 9    | 9        | Graph: Minimum Spanning Tree & Shortest Path | 10    |
| 10   | 10       | Challenges                                   | 10    |
|      |          | Total  | 100   |