本試題是否可以使用計算機：□可使用 ， ☑不可使用　（請命題老師勾選）

Total 100 points

1. (10%) Convert an octal (8 進位) number, $(50321.467)_8$, to a hexadecimal (16 進位) number.

2. (10%) Describe functionalities for three components, including *mobile nodes*, *foreign agents*, and *home agents*, in mobile IP.

3. (10%) What is the difference(s) between call-by-reference and call-by-value?

4. (10%) Compare long-term scheduler and short-term scheduler used in operating systems.

5. (10%) In object-oriented programming, which two parts are typically needed in an object?

6. (10%) Which of the following are the properties for local area networks (LANs)?

   A. Dedicated point-to-point line
   B. Most use a store-and-forward, packet-switched technology to deliver messages
   C. The owner of the devices is also the owner of the means of communications
   D. Connects hardware devices that are in close proximity

7. (10%) Compare two data structures, *stacks* and *queues*.

8. (10%) Describe the functionality for a *program counter* in the CPU architecture.

9. (10%) Describe the differences between *compilers* and *interpreters*.

10. (10%) Visit all nodes in the tree below based on inorder traversal. Show the sequence of visited nodes.