1. Is it possible to implement any recursion algorithm by an iteration algorithm? Is it also possible to implement any iteration algorithm by a recursion algorithm? Give an example to describe any one of your answers.   14%

2. Why we have to analysis algorithms in solving a problem by computers? Use the sort problem as an example to indicate the relation between the analysis of algorithm and the implementation of algorithm.   15%

3. When you work in the computer implementation of the Newton's method to find a real zero of a function, what are the most important key points you have to consider?   14%

4. Explain the terms:
   (a) language processor; (b) ASCII code; (c) system software.   15%

5. Give a way of representing floating-point numbers by binary codes. 13%

6. Give the definitions and examples for the following terms:
   (a) internal sort algorithm;
   (b) external sort algorithm;
   (c) stable sort algorithm.   15%

7. What are validation, verification and testing in the software development life cycle? How can they be done, respectively?   14%

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