Chapter 19: Recursion

Briefly describe the purpose of recursion.

Question 2:
(a) Give one simple example of recursion in pseudocode. Use line number (e.g. 1, 2, etc.)
(b) State the purpose of this algorithm.
(c) Explain how recursion works step by step each line.
(d) On which line is the recursive call made?
(e) Unwind the algorithm to find the answer to the initial problem. Use a table.

Question 3:
(a) Give a second example of recursion in pseudocode. Use line number (e.g. 1, 2, etc.)
(b) State the purpose of this algorithm.
(c) Explain how recursion works step by step each line.
(d) On which line is the recursive call made?
(e) Unwind the algorithm to find the answer to the initial problem. Use a table.

Question 4:
Explain the role of base case in recursion.

Question 5:
What do we mean by the term 'rogue value'?

Question 6:
List the criteria needed when use a recursive algorithm.

Question 7:
Define the following terms by referring to recursive subroutines:
(a) Parameter by value
(b) Parameter by reference
(c) Local variables
(d) Stack overflow
(e) Return values

Question 8:
Explain what happens whenever a subroutine is called.

Question 9:
In your words, explain the steps on pages 5-8 (using your own example from Question 2 or 3).

Question 10:
Draw a copy of the picture in page 8 based on your example.

Question 11:
Briefly explain the procedure described in Video 1 (page 9).

Question 12:
On page 10, trace the subroutine when called with the string "pizza". Do NOT see the answer on page 11 !!!

Question 13:
Using one of your recursion examples, convert it to an iterative one.

Question 14:
Give some differences between recursive and non-recursive algorithms.

Question 15:
What happens when a subroutine is called?

Question 16:
(a) Explain what happens with Call Stack on page 14.
(b) Explain what happens with Stack Frame on page 14.

Question 17:
Briefly explain the procedure described in Video 2 (page 15).

Question 18:
(a) Explain the purpose of subroutine (page 16).
(b) Trace the subroutine using your own values.