

## 10 Data Types and Structures — Part 2 — Answers

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### Answers

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**10.1** *C* (last in, first out).

**10.2** *A* (first in, first out).

**10.3** (a) overflow: trying to push when the stack is already full; (b) underflow: trying to pop when the stack is empty.

**10.4** So the front and rear pointers wrap back to the start when they reach the end, reusing the freed cells instead of wasting them.

**10.5** To make sure buffered data is actually written to disk (and to release the file for other programs).

**10.6** Function calls nest, and the *most recently* called function must return first. A stack is last-in, first-out, so the latest return address is taken off first — exactly the order returning needs.

**10.7** Popping gives 4, 3, 2 (LIFO); these are enqueued so the queue's front-to-rear order is 4, 3, 2. Dequeueing one removes the front, so 4 comes out.