

## Chapter 3

### Multiple Choice

1. The \_\_\_\_ of a process contains temporary data such as function parameters, return addresses, and local variables.
  - A) text section
  - B) data section
  - C) program counter
  - D) stack
2. A process control block \_\_\_\_\_.
  - A) includes information on the process's state
  - B) stores the address of the next instruction to be processed by a different process
  - C) determines which process is to be executed next
  - D) is an example of a process queue
3. The \_\_\_\_\_ refers to the number of processes in memory.
  - A) process count
  - B) long-term scheduler
  - C) degree of multiprogramming
  - D) CPU scheduler
4. When a child process is created, which of the following is a possibility in terms of the execution or address space of the child process?
  - A) The child process runs concurrently with the parent.
  - B) The child process has a new program loaded into it.
  - C) The child is a duplicate of the parent.
  - D) All of the above
5. A \_\_\_\_\_ saves the state of the currently running process and restores the state of the next process to run.
  - A) save-and-restore
  - B) state switch
  - C) context switch
  - D) none of the above
6. A process may transition to the Ready state by which of the following actions?
  - A) Completion of an I/O event
  - B) Awaiting its turn on the CPU
  - C) Newly-admitted process
  - D) All of the above
7. In a(n) \_\_\_\_ temporary queue, the sender must always block until the recipient receives the message.

- A) zero capacity
- B) variable capacity
- C) bounded capacity
- D) unbounded capacity

8. A blocking send() and blocking receive() is known as a(n) \_\_\_\_\_

- A) synchronized message
- B) rendezvous
- C) blocked message
- D) asynchronous message

9. When communicating with sockets, a client process initiates a request for a connection and is assigned a port by the host computer. Which of the following would be a valid port assignment for the host computer?

- A) 21
- B) 23
- C) 80
- D) 1625

10. A(n) \_\_\_\_\_ allows several unrelated processes to use the pipe for communication.

- A) named pipe
- B) anonymous pipe
- C) LIFO
- D) ordinary pipe

11. Which of the following statements is true?

- A) Shared memory is typically faster than message passing.
- B) Message passing is typically faster than shared memory.
- C) Message passing is most useful for exchanging large amounts of data.
- D) Shared memory is far more common in operating systems than message passing.

12. Child processes inherit UNIX ordinary pipes from their parent process because:

- A) The pipe is part of the code and children inherit code from their parents.
- B) A pipe is treated as a file descriptor and child processes inherit open file descriptors from their parents.
- C) The STARTUPINFO structure establishes this sharing.
- D) All IPC facilities are shared between the parent and child processes.

13. Which of the following statements is true?

- A) Named pipes do not allow bi-directional communication.
- B) Only the parent and child processes can use named pipes for communication.
- C) Reading and writing to ordinary pipes on both UNIX and Windows systems can be performed like ordinary file I/O.
- D) Named pipes can only be used by communicating processes on the different machine.

14. Which of the following is not a process type in the Chrome browser?

- A) Plug-in
- B) Renderer
- C) Sandbox
- D) Browser

15. The \_\_\_\_\_ application is the application appearing on the display screen of a mobile device.

- A) main
- B) background
- C) display
- D) foreground

16. A process that has terminated, but whose parent has not yet called wait(), is known as a \_\_\_\_\_ process.

- A) zombie
- B) orphan
- C) terminated
- D) init

### **True/False**

17. The difference between a program and a process is that a program is an active entity while a process is a passive entity.

18. The exec() system call creates a new process.

19. All access to POSIX shared memory requires a system call.

20. Local Procedure Calls in Windows XP are similar to Remote Procedure Calls.

21. For a single-processor system, there will never be more than one process in the Running state.

22. Shared memory is a more appropriate IPC mechanism than message passing for distributed systems.

23. Ordinary pipes in UNIX require a parent-child relationship between the communicating processes.

24. A socket is identified by an IP address concatenated with a port number.

25. The Mach operating system treats system calls with message passing.

26. Named pipes continue to exist in the system after the creating process has terminated.