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## CHAPTER 10

# *Software Engineering*

### Review Questions

1. Software engineering is the establishment and use of sound engineering methods and principles to obtain reliable software that works on real machines.
2. Software goes through a cycle of repeating phases until it becomes obsolete.
3. Obsolete means a loss of validity because of inefficiency, obsolescence of the language, major changes in the company or other factors.
4. Analysis, design, implementation, and testing
5. The analysis phase consists of: defining the users, defining the needs, defining the requirements, and defining the methods.
6. Blackbox testing is the testing of a system with no knowledge of the program internals and is done by the system test engineer and the user.
7. Whitebox testing is the testing of all of the functionality of a system and is the responsibility of the programmer.
8. Cohesion is a measure of how closely the processes in a program are related. Coupling is a measure of how tightly two modules are bound to each other.

### Multiple-Choice Questions

9. b
10. b
11. d
12. a
13. c
14. b
15. c
16. c
17. d
18. d

- 19. a
- 20. b
- 21. a
- 22. d
- 23. d
- 24. b
- 25. d
- 26. a
- 27. c
- 28. d
- 29. d
- 30. b
- 31. a
- 32. c
- 33. a
- 34. b
- 35. c
- 36. c
- 37. a
- 38. b
- 39. c

### Exercises

- 40. Data coupling
- 41. Content coupling and control coupling
- 42. Content coupling
- 43. Transferability (code reusability)
- 44. Any valid template sheet must include areas for the definition of the users, needs, requirements, and the methods. There should be a place for the definition of the sources and the requirement and method sections should require a statement of the rationale behind them.
- 45. The template sheet should include places for the documentation of the modularity, the files used, and the databases used. Be sure to indicate that a final copy of any structure charts or class diagrams should be included.
- 46. Every tool and every program should be documented at this phase. Be sure to indicate that the final copy of any flowcharts or pseudocode should be included.
- 47. Each type of test applied to the final product must be documented along with the results.