Questions:

1. Which of the following process models best emphasizes risk management?
   a. Boehm’s spiral model
   b. Incremental development
   c. Waterfall process
   d. Reuse-based software engineering
   [1 point]

2. Three principles or practices of extreme programming (XP) are:
   a. Refactoring, small program releases, formal requirements
   b. Sustainable pace, continuous integration, incremental planning
   c. Simple design, peer reviews, on-site customer
   d. None of the above (that is, none of the above lines contains three valid XP principles or practices)
   [1 point]

3. Which of the following can be used for requirements specification?
   a. Structural natural language
   b. Gantt charts
   c. Data structures
   d. Test harnesses
   [1 point]

4. What kind of software is tested during release testing?
   a. Program units such as methods or classes
   b. Program components that need to be integrated by the development team
   c. A software system intended for use by customers and users
   d. None of the above
   [1 point]

5. Which of the following is a benefit of software reuse?
   a. Accelerated development
   b. Increased dependability
   c. Standards compliance
   d. All of the above
   [1 point]

6. Which of the following is not a type of user testing?
   a. Alpha testing
   b. Beta testing
   c. Component testing
   d. Acceptance testing
   [1 point]
7. In relation with managing and motivating people, what is the highest level in the human needs hierarchy? [Hint: the lowest level is physiological needs]
   a. Safety needs
   b. Self-realization needs
   c. Social needs
   d. Esteem needs
   [1 point]

8. Which of the following is a factor that affects software pricing?
   a. Market opportunity
   b. Requirements volatility
   c. Neither (a) nor (b)
   d. Both (a) and (b)
   [1 point]

9. Which of the following is not a project management activity?
   a. People management
   b. Reporting
   c. System deployment
   d. Project planning
   [1 point]

10. Which of the following is a strategy in risk planning?
    a. Contingency strategy
    b. Minimization strategy
    c. Avoidance strategy
    d. All of the above
    [1 point]

11. Describe the waterfall software process model. Also, indicate its advantages, disadvantages, and applicability.
    [6 points]

12. Describe the client-server architecture pattern used in architectural design. Also, indicate its advantages and disadvantages.
    [5 points]

13. Briefly describe three (of the five) main principles of agile methods (2-4 lines each).
    [4 points]

14. Describe the steps of the test-driven development (TDD) process and indicate TDD’s advantages and disadvantages.
    [5 points]

15. Briefly explain what is meant by service as a reusable software component. Also, concisely describe the three logical stages of the service engineering process.
    [5 points]

16. Consider the following types of software project risks: technology, people, organizational, tools, and requirements. For each type give a concrete example of risk and provide an appropriate management strategy for that risk.
    [5 points]

17. Consider your group project in CS 425/625.
   a. Briefly describe the project’s topic, significance/utility, and most important features (7 to 10 lines).
   b. List the project’s 3 most important functional requirements.
   c. Briefly indicate the main components (subsystems/modules) of the code (at least 4 such components should be listed).
   d. Indicate 3 possible enhancements for your project.
    [8 points]