Chapter 2

Assessment Questions

1. Giving reasons for your answer based on the type of system being developed, suggest the most appropriate generic software process model which might be used as a basis for managing the development of the following systems:

i. A system to control anti-lock braking in a car.

ii. A virtual reality system to support software engineering maintenance.

iii. A university accounting system that replaces an existing system

iv. An interactive system for railway passengers that might finds train times from terminals installed in stations.

v. A new software product that would connect computers through satellite communication. Assume that your team has no previous experience in developing satellite communication software.

vi. A software product that would function as the controller of a telephone switching system.

vii. A new library automation software that would link various libraries in the city.

vii. An extremely large software that would provide, monitor, and control cellular communication among its subscribers using a set of revolving satellites.

ix. A new text editor.

x. A compiler for a new language

2. Explain why programs, which are developed using evolutionary development, are likely to be difficult to maintain?

3. What do you understand by the common process framework of software development? List the various umbrella activities that are being complemented by generic view of software engineering.

4. Explain how both the waterfall model of the software process and the prototyping model can be accommodated in the spiral process model.

5. Explain why the spiral model is considered to be a Meta model. Compare the relative advantages of using the waterfall model and the spiral model of software development.

6. Explain why a software system that is used in a real-world environment must change or become progressively less useful.
7. IS there ever a case when the generic phases of the software engineering process don't apply? If so, describe.

8. The SEI's capability maturity model (CMM) is an evolving document. Explain the various KPAs mapped into each level.

9. Which of the software engineering paradigms do you think would be most effective? Why?

10. As you moved outward along the process flow path of the spiral model, what can you say about the software that is being developed or maintained?

11. Which is more important- the product or the process?

12. "Software Engineering is a layered technology". Justify your answer.

13. Explain the term Software and Software Engineering in your own words.

14. What do you mean by the term life cycle model of software development? Why is it important to adhere to a life cycle model while developing a large software product?

15. What is prototype model? Under what circumstances it beneficial to construct a prototype model? Does the construction of a prototype model always increase the overall cost of software development?
16. What natured software is likely to be developed using RAD model?

17. Differentiate between computer science, software engineering, system engineering and computer engineering.
18. Describe the XP concepts of *refactoring* and *pair programming* in your own words. What is a spike solution in XP?
19. Explain the Extreme programming process (Key XP activities) with a neat figure.

20. How is agile methodology different form traditional waterfall process? What kind of projects is suitable for the agile methodology?

21. Discuss the following agile process model.
    a) Adaptive software development and its life cycle
    b) Dynamic system development
    c) Scrum.
22. What are the different types of agile methodologies?

23. Difference between extreme programming and scrum?

24. Explain Rational Unified Process (RUP) with a neat figure.
24. Why are developers encouraged to use CASE tools? Explain different types of CASE tools.