



Answer the following questions. The total credit is 60. **The Exam is in seven Pages**

Question (1) (10 points)

Fill in the following table using True or False:

1	2	3	4	5	6	7	8	9	10

1. One of the main challenges Software Engineering facing today is the fast changes in requirements.
2. The software requirements document defines what the software must do.
3. The hardest part of software development is learning new languages and writing code.
4. Most defects (bugs) and errors in a software system that costs a lot are done in the coding stage.
5. The Boehm's spiral model represents the process as a sequence of activities with backtracking.
6. Evolutionary development of software makes it easier to get customer feedback.
7. In systems with a long life, development costs may be several times maintenance costs.
8. In XP, we write the programs and then write the code to test them.
9. In XP, programmers work in pairs to save on hardware costs.
10. The scrum is an iterative development model.

Question (2) (15 points)

MULTIPLE CHOICE: Choose the correct answer and fill in the following table (Only one choice)

1	2	3	4	5	6	7	8	9	10

11	12	13	14	15

- 1. Which of the following is a benefit of software reuse?**
 - a. Accelerated development
 - b. Reduce Costs
 - c. Reduce Risk
 - d. All of the above

- 2. How does a software project manager need to act to minimize the risk of software failure?**
 - a. Double the project team size
 - b. Request a large budget
 - c. Form the software team
 - d. Track progress

- 3. In The classical model of the software life cycle (the waterfall model); Which phase may be defined as "The concept is explored and refined, and the client's requirements are elicited?"**
 - a. Requirements
 - b. Specification
 - c. Design
 - d. Implementation and Integration

- 4. Three principles or practices of *extreme programming (XP)* are:**
 - a. Refactoring, small program releases, Collective ownership
 - b. Sustainable pace, continuous integration, incremental planning
 - c. Simple design, customer reviews, on-site customer
 - d. None of the above

- 5. A simple way of looking at the spiral software life-cycle model is as a waterfall model with each phase preceded by**
 - a. Build and Fix
 - b. Risk Analysis
 - c. Testing
 - d. Upgrading

- 6. What are the factors to be considered when planning a software development effort?**
- a. Performance, Problem, Product, Planning
 - b. Productivity, Programming, Performance, Pay-Off.
 - c. People, Problem, Product, Process
 - d. People, Problem, Product, Portability
 - e.
- 7. Which of the following could be a deliverable for a software system?**
- a. Source Code
 - b. Reference Manual and User's Guide
 - c. Requirements Document
 - d. All the above
- 8. In planning a software project you may**
- a. Find ways to produce results using limited resources
 - b. Overestimate the financial budget
 - c. Structure the team to limit administrative interference
 - d. All the above
- 9. Which architecture design supports the incremental development of sub-systems?**
- a. Layered architecture
 - b. Repository architecture
 - c. Client-server architecture
 - d. Pipe and filter architecture
- 10. Which architecture is used when large amounts of data are to be shared?**
- a. Layered architecture
 - b. Repository architecture
 - c. Client-server architecture
 - d. Pipe and filter architecture
- 11. The development testing stage includes all the following except**
- a. Unit testing
 - b. Design testing
 - c. Component testing
 - d. System testing
- 12. What is the fundamental reason that software cannot be considered to be structured or engineered**
- a. It is designed by humans and therefore will always have bugs
 - b. Software engineering is an art - not a science
 - c. The subject is new
 - d. The complexity of systems and their interaction continues faster than we can understand it.

13. Read the following paragraph and identify the correct statement.

“Imagine that you were recently hired as a software engineer to a company that specializes in aircraft navigation control software. At your first days, you observe that they in fact do NOT do a few tests that they should in order to comply with the standard safety rules. When you inquire about this from the project manager, he dismisses it saying that those tests are really unnecessary (and takes an unreasonably long time to conduct, as well as being expensive) and that they have performed other tests before, without any problems.”

- a. You should immediately resign from the company and file a complaint with the relevant authorities
- b. You should do nothing and let the matter slide
- c. Although you are new to the company, and you hardly know anything about the internal processes and politics, you should insist on the company changing its work practices immediately; or you threaten to report the matter
- d. Since you are new to the company, and you are unfamiliar with the internal processes and politics, you should first find-out more about the issue and its background

14. The sprints in the scrum normal last for

- a. 2 to 4 weeks
- b. 3 to 5 weeks
- c. Only one week
- d. None of the above

15. The agile Fundamentals include the following except

- a. flexible planning
- b. frequent system releases
- c. satisfying the stakeholders
- d. good team communication

