

CS504-Software Engineering I

Midterm Special 2006

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Question #1:- What makes requirements elicitation difficult?

bounding
scope
understanding user
requirements
variability
all of the above

Question # 2:- Which of the items listed below is not one of the software engineering layers?

Process
Manufacturing
Methods
Tools

Question # 3:- Draw a Use Case Diagram for the following steps:

A user is placing an order with a sales company might follow these steps.

1. Browse catalog and select items.
2. Call sales representative.
3. Supply shipping information.
4. Supply payment information.

Receive conformation number from

salesperson.

Solution:-
This case study shows the customer as an actor because the customer is using the ordering system. The diagram takes the simple steps listed below and shows them as actions or use cases the customer might perform.

Question # 4:- What are the three generic phases of software engineering?

definition, development, support
what, how, where
programming, debugging, maintenance
analysis, design, testing

Question # 5:- Discuss briefly the architectural attributes of software?

Solution:-

Architectural Attributes of Software:-

Software architecture must address the non-functional as well as the functional requirements of the software system. This includes performance, security, safety, availability, and maintainability. Following are some of the architectural design procedure that can help in addressing these challenges.

Performance:-

Performance can be enhanced by localising operations to minimise sub-system communication. That is, try to have self-contained modules as much as possible so that inter-module communication is minimized.

☒ **Security:-**
Security can be improved by using a layered architecture with critical assets put in inner layers.

☒ **Safety:-**
Safety-critical components should be inaccessible

☒ **Availability:-**
Availability can be ensured by building redundancy in the system and having redundant components in the architecture.

☒ **Maintainability:-**
Maintainability is directly related with simplicity. Therefore, maintainability can be increased by using fine-grain, self-contained components.

Question # 6:- Which of these items should be used to select a software framework? process

- ☒ People
- ☒ Product
- ☒ Project
- ☒ **All of the above**

Question # 7:- The prototyping model of software development is

- ☒ A reasonable approach when requirements are defined.
- ☒ **A useful approach when a customer cannot define requirements clearly.**
- ☒ The best approach to use for projects with large development teams
- ☒ A risky model that rarely produces a meaningful product