Chapter 2: Software processes

Your name:

Answer all questions. 1 mark per question

1. What are the fundamental activities that are common to all software processes?

    Software specification

    Software design and implementation

    Software validation

    Software evolution

2. List the 3 generic process models that are used in software engineering?

    The waterfall model

    Incremental development

    Reuse-oriented software engineering

3. Why are iterations usually limited when the waterfall model is used?

    The waterfall model is a document-driven model with documents produced at the end of each phase. Because of the cost of producing and approving documents, iterations and costly and involve significant rework. Hence they are limited.

4. What are the three benefits of incremental development, compared to the waterfall model?

(a) The cost of accommodating changes to customer requirements is reduced.

(b) It is easier to get customer feedback on development work that has been done.

(c) More rapid delivery and deployment of useful software to the customer is possible.

5. What are the development stages in reuse-based development?

Component analysis

Requirements modification

System design with reuse

Development and integration

6. What are the principal requirements engineering activities?

Feasibility study

Requirements elicitation and analysis

Requirements specification

Requirements validation

7. Why is it increasingly irrelevant to distinguish between software development and evolution?

Few software systems are now completely new and a more realistic model of software development is of an iterative process that lasts for the lifetime of the software.

8. What are the advantages of using incremental development and delivery?

Early delivery of critical functionality to the customer

Early increments serve as prototypes to explore requirements

Lower risk of overall project failure

More extensive testing of critical customer functionality

9. What are the 4 sectors in each loop in Boehm's spiral model?

Objective setting

Risk assessment and reduction

Development and validation

Planning

10. What are the six fundamental best practices in the RUP?

Develop software iteratively

Manage requirements

Use component-based architectures

Visually model software

Verify software quality

Control changes to software

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