VALLIAMMAI ENGINEERING COLLEGE

SRM Nagar, Kattankulathur-603203.

Department of Information Technology

Question Bank- Even Semester 2014-2015

IV Semester

CS6403-SOFTWARE ENGINEERING

Handled By,

MS.R.Thenmozhi, A.P(Sr.G) & Ms.R.Shanthi, A.P(O.G)

UNIT-I

PART-A

1. Define Software process.

2. What are the umbrella activities of a software process?

3. Differentiate System and Computer based System.

4. Define Business process Reengineering.

5. Mention the drawbacks in Linear Sequential model?

6. Define software prototyping. What are the prototyping approaches in software process?

7. Mention the advantages and disadvantages of water fall model?

8. What is the main objective of Win-Win Spiral Model ?

9. What are the Drawbacks of RAD Model ?

10. List the process maturity levels in SEIs CMM.

11. Write short note on the various estimation techniques.

12. Compare the relative advantages of the object oriented and function oriented approaches to software design.

13. Discuss the software process and product metrics with the help of examples and explain the SDLC.

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                                                            Ms.R.Shanthil, A.P(O.G)

14. State ZIP's law.

15. What is meant by Delphi method?

16. What are the classes of software projects in COCOMO model?

17. What is the purpose of timeline chart?

18. What is meant by Software project management?

19. What is EVA?

20. What is the difference between the "Known Risks" and Predictable Risks"?

PART-B

1. Describe evolutionary process models.(16)

2. i.Explain the Software Engineering Myths (8)

   ii.Write a note on Capability Maturity Model activities and its levels in detail. (8)

3. Explain the Win-Win spiral Model with neat diagram.

4. Explain the various phases of software development life cycle and identify deliverables at each phase?

5. i.What is prototyping? Explain the types of prototyping?(8)

   ii. Explain the prototype paradigm in process models.(8)

6. i.Explain cocomo model for estimation (8)

   ii. What is the process of Delphi method. State the advantages and disadvantages of this method. (8)

7. i. Explain Component Based Development model in detail. [8]

   ii.Expalin RAD model.(8)

8. How the cost of the s/w is estimated using i) function point metric model ii) Lines of Code model iii) cocomo model.

9. Explain about Project Scheduling and its methods.

10. i. How is earned value computed to assess the progress? [8]

    ii. How do you differentiate software engineering from system engineering? [8]

UNIT-II

PART-A

1. What is requirement engineering?

2. What is meant by feasibility study?

3. What is meant by requirement validation?

4. What is meant by Requirement management?

5. What are the non-functional requirements of software?

6. Define functional and non-functional requirements.

7. What are the Requirements Engineering Process Functions?

8. Distinguish between the terms inception, elicitation, and elaboration with reference to requirements.

9. What are the Difficulties in Elicitations?

10. What are the characteristics of SRS?

11. An SRS is traceable. Comment.

12. Define Quality Function Deployment (QFD)?

13. Define System Flow Diagram (SFD)?

14. Define Data Dictionary.

15. Differentiate data flow diagram and state transition diagram.

16. What is meant by Cardinality and Modality ?

17. What are the Objectives of Requirement Analysis ?

18. What is ERD?

19. Define Swim Lane Diagram?

20. How to represent the content of the data object in a data dictionary.

PART-B

1. State and explain the requirements engineering tasks in detail.

2. Explain the execution of seven distinct functions accomplished in requirement engineering process.

3. Explain functional and behavioral models for software requirement process. Nov

4. What is the purpose of feasibility study? Explain the phases and issues involved in feasibility study?

5. Describe the primary differences between structured analysis and object oriented analysis.

6. What is the difference between SRS document and design document? What are the contents we should contain in the SRS document and design document.

7. Describe function point analysis with a neat example. (8 Marks)
   With an example explain about DFD. [8]

8. Write a detailed note on scenario based modeling.

9. Consider a simple "Online Vehicle Purchase System". Apply scenario based modeling and draw the appropriate diagrams for it.

10. Explain the requirement s engineering process. Why is it difficult to gain a clear understanding of what the customer wants?

Unit-III

PART-A

1. List two principles of good design

2. Define data abstraction

3. Write the use of data acquisition system

4. Develop a CRC model index card for a class "Account" used in a banking application

5. How do you differentiate internal and external design?

6. How do you apply modularization criteria for a monolithic software?

7. What are the design quality attribute "FURPS" meant?

8. How is functional independence measure?

9. When is transaction mapping applied?

10. What is the difference between the notion of software architecture and design patterns

11. Is cyclomatic complexity measure a good indicator of system design? Justify

12. Distinguish between fan in and fan out

13. Explain the qualitative criteria for measuring independence

14. What is coupling and a cohesive module?

15. What are the different types of Cohesion?

16. What are the various types of coupling?

17. List the guidelines for data design

18. What are the benefits of horizontal and vertical partitioning

19. What is the benefit of modular design?

20. Define Interface design

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PART-B

1. Explain the fundamental software design concepts Explain various modularity and control system commonly used on any organizational module

2. What are the good characteristics of good design? Discuss briefly about modular design and architectural design

3. i. What is transform mapping? Explain the process in detail (8)

   ii. Explain data design in detail (8)

4. Explain the core activities involved in user interface design process with necessary block diagram

5. Discuss about software Architectural design in detail.

6. Explain clearly the concepts of coupling and cohesion? For each type of coupling give an example of two component coupled in that way?

7. Explain the components Data flow diagram. Draw a DFD of level-3 for Railway ticket reservation system

8. What are the characteristics of a good user interface design? Describe how UID may be developed for a data acquision system

9. Draw the state machine diagram for a microwave oven and explain the various scenarios

10. Tamil Nadu Electricity Board(TNEB) would like to automate its billing process.Customers apply for a connection (domestic/commercial).EB staff take readings and uptade the system.Each customer is required to pay charges bi-monthly according to the rates set ofr the type of connection. Customers can choose to pay either by cash/card. A bill is generated on payment. Monthly reports are provided to EB Manager.

    i. Give a name for the system

    ii. Draw the Level – 0 DFD(Context Flow diagram)

    iii. Draw the Level-DFD

Unit-IV

1. What are the two levels of testing?

2. Define Regression Testing? What is the necessary to do regression testing

3. What is black box testing

4. Write down the generic characteristics of software testing

5. how do you measure cyclomatic complexity?

6. What is Bing-Bang approach

7. When is orthogonal array testing applicable?

8. What is a boundary value analysis?

9. What is the difference between black box testing and white box testing

10. how are software testing related to reliability of software

11. what are side effects while debugging

12. In Unit testing of a module, it is found a set of test data, at maximum 90% of the code alone were tested with the probability of success 09. What is the reliability of the module?

13. Distinguish between alpha and beta testing.

14. What are the various types of system testing?

15. What are the various types of system testing?

16. Distinguish between verification and validation

17. Define Smoke Testing ? What are the benefits of smoke testing?

18. What is the different between testing and debugging?

19. What is security testing?

20. List out software implementation techniques

PART-B

1. Discuss on

      i.   Black box testing

      ii.   Regression testing

      iii.   White box testing

      iv.   Integration testing

2. What is Boundary value analysis? Explain the technique specifying rules and is usage with the help of an example

3. What is Equivalence class partitioning? List rules used to define valid and invalid Equivalence class. Explain the technique using example

4. i. Write a note on unit testing (8)

   ii. Explain Regression testing in detail (8)

5. Define Black box testing and white box testing .Explain the importance of testing boundary values with an example

6. Write elaborately on white box testing for a software, How do you develop test suites?

7. i. Explain software implementation techniques What is the percentage in total cost of the project? How do you expedite the implementation stage (8)

   ii. What is meant by control flow testing? Is it always falling with data flow in case of software? Justify? (8)

8. Write the program for sorting of n numbers. Draw the flow char, flow graph, find out the cyclomatic complexity

9. i. Enumerate the various types of software test/which type of testing is suitable for boundary condition? Justify (6)

   ii. Why is testing important? (4)

   iii. Narrate the path testing procedure in detail with sample code (6)

10. i.What is meant by system testing? Explain different types of system testing in detail(8)

    ii. Explain the debugging process in detail (8)

UNIT-V

PART-A

1. What are the Decomposition Techniques?
2. How do we compute the "Expected Value" for Software Size?
3. What are the methods of cost estimation?
4. What is Work Breakdown Structure?
5. What is Risk mitigation?
6. What are the processes of risk management?
7. What are the factors that lead to Risk?
8. What is risk likelihood?
9. What is the relation between error, fault and failure.
10. What is Risk? Give an example of risk.
11. What is the difference between direct and indirect measures
12. How to measure the function point FP?
13. Differentiate measure, metric and indicators
14. How should we assess the quality of proposed software metric?
15. Why LOC is not treated as a standard metric?
16. Name few metrics that determine software quality
17. Define base line
18. An organic software occupies 15,000 LOC. How many programmers are needed to complete?
19. What is the purpose of time line chart?
20. What is EVA?

PART-B

1. i. Explain the methods of decomposition for software cost estimation. (8)

    ii. Write short notes on the various estimation techniques.(8)

2. i. Explain about Cocomo II model cost estimation.(8)

    ii. Write about the types of project plan.(8)

3. i. What Questions need to be answered in order to develop a project plan? ?(Or) Write a short note on W5HH principle? (8)

    ii. Mention the challenges of risk management. (8)

4. Explain RMMM.

5. Discuss Decision tree to support Make/buy decision

6. i. Explain the basic principles of software project scheduling (8)

    ii. Explain the relationship between people and effort with diagram (8)

7. i. How to computer a task set selector value for a project? Explain with suitable illustration (8)

    ii. How to track the schedule for the project? Explain in detail (8)

8. i. Explain the various technical metrics and measures for software? (8)

    ii. Write a short note on Earned value Analysis (8)

9. i. What are the metrics for small organizations? Discuss (10)

    ii. Write a short notes on Software cyclomatic complexity metric (6)

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10.   i. Explain the scope and importance of software metrics (10)

ii. What are the attributes that should be encompassed by effective software metrics (6)

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