**ACS COLLEGE OF ENGINEERING**

**Mysore Road, Bengaluru- 560074**

**Department of Computer Science and Engineering**

**QUESTION BANK**

**Sem/Subject/Code: 3rd(A)/ SOFTWARE ENGINEERING /18CS35**

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**MODULE 1: Introduction ,Software process, Requirements engineering**

1. Define software engineering. Explain the need for software engineering.
2. Define software engineering. Explain the different types of software products.
3. What are the key challenges facing software engineering?( Legacy systems

Heterogeneity, Delivery)

And What is the difference between software engineering and system engineering?

1. What is software crisis.
2. Explain different process activities that are common to all software processes.
3. Give a brief description of four essential attributes of a good software.
4. Describe four professional responsibilities of a software engineer.(confidentiality,competence,IPR,computer misuse).
5. Write a short notes on IEEE/ACM code of ethics.
6. Case study on Insulin pump control system,MHC-PMS,weather station.
7. What is software process model? Explain the types of software process models.
8. With a neat diagram, explain Boehms spiral process model.
9. With a block diagram, describe the waterfall model(software life cycle) of software development process.
10. What is s software process model? Explain with a block diagram the evolutionary development model.(incremental development )
11. With appropriate block diagram, explain briefly the requirement engineering process or software specification activities
12. Explain the need for requirements elicitation and analysis? Explain the different process activities involved
13. Distinguish between functional and non-functional requirements. With a bock diagram explain non-functional requirement types.
14. Explain the metrics for specifying non-functional requirements.
15. Explain the structure of a requirements document. (write IEEE format of writing SRS).
16. What is requirement engineering and what are types of requirement?
17. Differentiate between user requirements and system requirements
18. Explain the requirement elicitation and analysis phase with spiral diagram. Give reasons why is it difficult phase in requirements engineering process.
19. Write short notes on Ethnography, use cases, and scenarios.
20. Explain briefly the requirements discovery
21. What is requirement specification? Explain natural language specification, structured specification, and tabular specification.
22. During the requirements validation process, what are the different types of checks to be carried out on the requirements in the requirements document? Also explain the requirements validation techniques
23. Explain requirements management.

**MODULE 2:Object Orientation**

1.Whta is object orientation? explain its aspects (Characteristics) with examples.

2.Explain the concepts of Object-oriented themes.

3.What is OO (object oriented) development.

4.Define a)class b)object c)class design d)class diagram e)values and attributes.

5.Explain 3 types of model which separates a system into distinct views.

6. Discuss the purpose of three models

7.With the help of UML explain a)ordering b)sequence c)association class d)generalization e)qualified association f)Bags and sequence g) Multiplicity

8.What are OO themes.

9.Define objects, class, operations and methods, values and attributes, class diagram.

10.Write a note on a)association end names b)generalization and inheritance.

11.What is modelling concepts? explain the class model of windowing system.

12.explain the class model for credit card management system.

**MODULE 3 :System Models, Design And Implementation**

1.Draw context for MHC-PMS and how interactions are modelled.

2.With the help of neat diagram explain the working of microwave oven.

3.write the diagram for withdrawing from ATM.

4.What is object aggregation. explain with eg and notations.

5.What is model driven engineering? state the 3 types system model produced.

6.Explain the sequence diagram for weather station system.

7.Write a note context model and object model.

8.Define system model. explain different types of system model.

9.Define RUP. Explain its phases.

10.list and discuss two types of behavioral model.

11.discuss various stages of design pattern design process with the help of design model.

12.what is design pattern. Explain the 4 types of design pattern.

13.Discuss implementation issues in software engineering.

14.Write a note on context model with diagram of MHC-PMS.

15.Explain a) class diagram b) generalization & aggregation.

16.What is software reuse? state the general model for open source license.

**MODULE 4**. **Software Testing, Software Evolution**

1.Explain development testing. And also explain 3 levels of granularity carried out in testing.

2. state the two goals and 3 levels of granularity of software testing process.

3.Discuss test driven development and state the benefits of test-driven developments.

4. What is user testing? Explain 6 stages of acceptance testing process.

5. list out all the guidelines for testing.

6.Explain TDD with block diagram. Explain TDD activities and benefits of TDD.

7.Write a note on release testing.

8. With appropriate block diagram explain the software evolution process.

9.Define program evolution dynamics. Discuss Lehman laws for program evolution dynamics.

10.What is software maintenance? State the activities of re-engineering process.

11.Explain software reengineering process with suitable diagram.

12.Explain the 4 strategic options of legacy system management with an example.

13. Explain component testing

14. List classes of interface errors

15. What is partitioning testing? Briefly explain with an example

16. Distinguish between software inspection and testing. What are the advantages of inspection over testing?

17. Explain general model of testing with the help of a block diagram

18 Explain interface testing with neat diagram

19 Explain briefly software inspection process

**MODULE 5:** **Project Planning and Quality Management**

1.Define project planning. Explain the 3 stages of project planning.

2.Explain software pricing. List and explain the factors affecting software pricing.

3. Explain in detail plan driven development approach to software engineering.

4.Explain the COCOMO-II estimation model.

5.List and explain various COCOMO cost estimation models.

6.Define project scheduling and explain the project scheduling process.

7.Define software quality and explain the quality plan structure and list the software quality attributes.

8.List out the questions to be answered by the quality management team to decide whether or not the software is fit for its intended purpose.

9.Define software standards and explain different types of software standards and mention their importance

10. write a note on ISO 9001 standards.

11. Explain how reviews and inspections are used to check the quality of project delivery

12. Explain the software review process with neat diagram.

13.Explain the various inspection checklists for software inspection process.

14. What is software measurement and metrics and what are the two ways in which measurements of a software system may be used and also explain two classes of metrics.

15.List and explain the key stages in software component analysis.

16. Differentiate between deliverables and milestones

17.Explain briefly the algorithmic cost modeling and experience-based techniques and write the difficulties.

18. Describe the cost estimation techniques with relevant example

19. Name the type of metrics used to estimate productivity