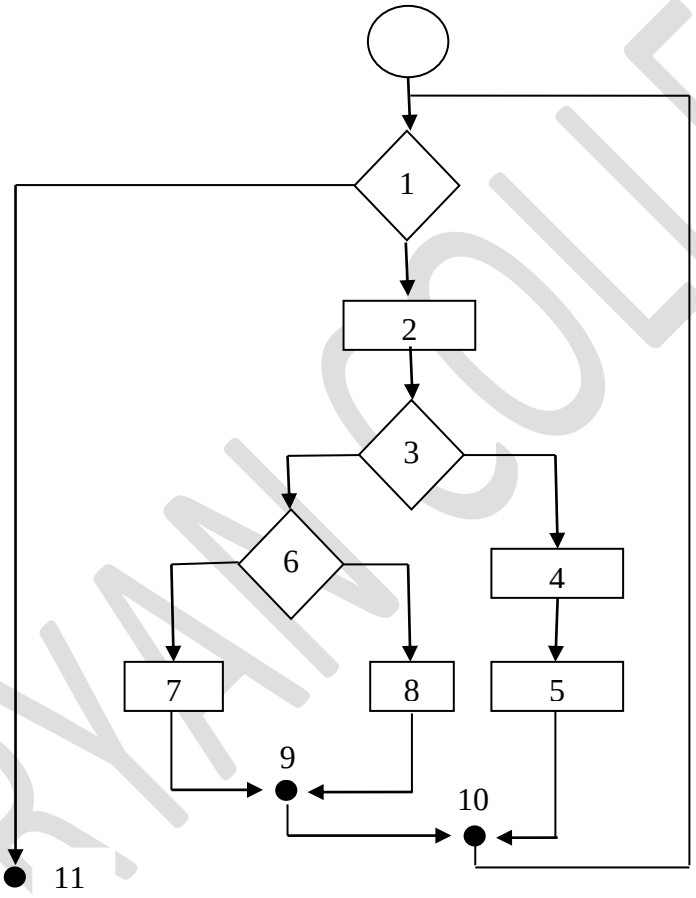
Aryan College

Software Engineering

Unit- 1 **Concept of Software Engineering**

1. What is Software Engineering? [2017, 2016, 2014, 2013]
2. Explain various software metrics in detail. [2017, 2014]
3. What is software? [2016, 2014]
4. What is a software project? Discuss the key deliverables of software project. [2016, 2015]
5. Why do we need Software Engineering? [2015]
6. How is software project managed? [2015]
7. Write short note on: [2015]
    a. Complexity Metric
    b. McCabe's Cyclomatic complexity
    c. Function Point Analysis. [2017, 2014]
8. Write the name of any two umbrella activity. [2014]
9. What is software model? [2014]
10. What is Cyclomatic Complexity? Calculate Cyclomatic Complexity of programs given by following flow chart [2013]



Discuss various terminologies and methods used in calculation of Cyclomatic Complexity.

Unit- 2 **System Development life Cycle & System Analysis and Planning**

1. What is SRS and what is its important? [2017, 2016]
2. Name the various software process models. [2017]
3. What is prototyping? [2017]
4. Which model is completed in very short period? [2017]
5. What do you mean by SDLC? Define its phases in detail. [2017, 2015, 2014]
6. Explain the Constructive Cost Model (COCOMO) in detail with a suitable example. [2017]
7. Write short note on: [2017, 2014]
    a. Project Scheduling.
8. What is software requirement analysis? [2017]

9. What is PERT chart? [2016, 2015]
10. What is a software prototype? [2016]
11. Discuss and draw the spiral model of software development. [2016, 2015, 2014, 2013]
12. What is water fall model? Discuss with the help of neat diagram. Give a critical discussion for the waterfall model. Explain advantages and disadvantages. [2016, 2015, 2014, 2013]
13. What is the system analysis? [2015]
14. What is a Gantt chart? [2015]
15. What do you understand by iterative refinement model? [2015]
16. Discuss the process of cost estimation for a software project. [2015]
17. What is baseline? [2014]
18. Explain LOC based and FP based decomposition technique. [2014]
19. Write a technical note on: Prototype model. [2014]
20. What is requirement engineering process? [2013]
21. What is Project Scheduling? Name two project scheduling methods. [2013]
22. What COCOMO stands for? What is use of COCOMO in software engineering? [2013]
23. Compute the function point value for a project with the following information: [2013]
    Number of user inputs=32
    Number of user outputs=60
    Number of user enquiries=24
    Number of files=8
    Number of external interfaces=2
    Assume that all complexity adjustment values are average. [i.e. 4, 5, 4, 10, 7 respectively]
24. What is software project estimation? What is role of decomposition in estimation? Discuss in brief LOC based and function point based decomposition techniques. [2013]
25. Discuss project scheduling in detail. [2013]

Unit- 3 **System Development and Design**

1. What do you mean by DFD? [2017]
2. What is software project management? [2017]
3. Define cohesion and coupling. [2017, 2016]
4. Write short note on: Object Oriented Design. [2017, 2014, 2013]
5. What is UML? [2016]
6. Discuss in detail the activities and tools of software design phase. Why is this phase important? [2016]
7. What do you understand by modularization? [2015]
8. Write short note on: System Design [2015]
9. What do you understand by "Principles of good software design". Design object oriented design in detail. [2015]
10. What is user interface? [2014, 2013]
11. What is the difference between analysis and design? [2014]
12. Write short note on: Design Level Metrics [2013]

Unit- 4 **Coding and Testing**

1. What is software re-engineering or write short note on re-engineering? [2017, 2013]
2. Differentiate between error, fault, and failure. [2017, 2014, 2013]
3. Differentiate between verification and validation. [2017, 2016, 2015, 2013]
4. What do you mean by software quality assurance? Explain software quality assurance plan in detail. [2017, 2013]
5. Write short note on: Clean Room approach. [2017, 2014]
6. Define software validation. [2016]
7. What is software quality? Discuss in detail the software quality factors. [2016]
8. What do you understand by software quality? List and describe the software quality factors. [2015]
9. What is formal technical review? [2014, 2013]
10. Write the software quality factors. [2014]
11. Discuss two coding standards for reuse of code. [2014, 2013]
12. Define Software Quality Assurance (SQA). List SQA activities. [2013]
13. List general guidelines for conducting a formal technical review meeting. [2013]

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Unit- 5 **Testing and Reliability**

1. What is unit testing? [2017, 2015]
2. What is software reliability? [2017, 2016, 2013]
3. How black box testing is different from white box testing? [2017]
4. What is the difference between alpha and beta testing? [2017]
5. What is software testing? Explain system testing and component testing in detail. [2017, 2015]
6. What is accepting testing? [2016]
7. Define Black Box testing. [2016, 2015, 2014]
8. Define Regression testing. [2016]
9. List the test plan activities. [2016]
10. What do you mean by software testing? Discuss the testing interventions of various levels of software development. [2016]
11. What is functional testing? [2015]
12. What is testing? Discuss the relevance of test case design for unit testing, integration testing, system testing and acceptance testing. [2015]
13. What is software testing? [2014]
14. Explain the various types of reliability model. [2014]
15. List the limitations of reliability model. [2014, 2013]
16. Explain functional and structural testing in detail. [2014]
17. Write test steps to test a simple loop, where n is the maximum number of allowable passes through the loop. [2013]
18. Define Software Configuration Management (SCM). [2014]
19. What is black-box testing? Discuss boundary value analysis technique. [2013]
20. Define software reliability and availability. Discuss simple measure of reliability. [2013]
21. Write short note on: [2013]
    a. Integration Testing.
    b. Structural Testing