

ASSIGNMENT NO.1

- Q1. Which type of model is used for the following situations:
- A. A small project that is similar to Fast Effort.
 - B. Very tight constraints are imposed and the problem can heavily compartmentalize.
 - C. Deadline is too tight so that fully functionality cannot reasonably deliver.
 - D. Project with uncertain requirement, breakthrough technology.

Q2. Discuss about the attributes of Good software?

Q3. What is the difference between SEI-CMM and ISO standards?

Q4. A. Compare and contrast the LOC and FP estimation methods?

B. Compute the function point value for a project with the following information domain characteristics.

Measurement Factor	Weighting Factor
i. Number of user inputs-40	4
ii. Number of user outputs-50	5
iii. Number of user inquiries-30	5
iv. Number of files-10	6
v. Number of external interfaces-5	10

Assume all complexity adjustment values are average 10, have a value of 3. Using the above function point, how is effort calculated?

Q5. What are major phases in the entire life cycle of the software? Which of them consume maximum effort?

Q6. Describe the process model with relative merits and demerits

- a. Waterfall Model.
- b. Evolutionary Development.
- c. Spiral
- d. Prototype

Q7. Software engineers have responsibilities to the engineering profession and society. They should not simple be concerned with the technical issues".

Justify the statement

Q8. What is a software crisis? Explain the reasons for software crisis.

Describe common software myths.

Q9. Count the LOC for program to find maximum of 3 numbers. Describe function Count.

Q10. Differentiate among software process, methods and tools. Why it is difficult to improve software process?

ASSIGNMENT NO.2

- Q1. Draw the complete DFD at least up to 2-levels for library management system?
- Q2. Discuss typical software Risk? What technique can we use to control each risk? Is it possible to prioritize the risk, Explain?
- Q3. Describe five desirable of a good software requirement specification document? What are the major issues in designing SRS?
- Q4. A. What are the benefits of ER diagram?
B. For a Book store draw an ER diagram?
- Q5. Why do we use Software Cost Estimation Models? Describe COCOMO and COCOMOII Models?
- Q6. What is data dictionary? Where it is used? Illustrate with example?
- Q7. Suppose we have a system with 500 lines of code, compute effort and development time for organic, semi-detached and embedded COCOMO model?
- Q8. Assuming $s=100,000$, $c=5000$, $D=15$, compute development time and manpower development for the Putnam Model?
- Q9. Is it economical to do risk management? What is the effect of this activity on the overall cost of the project?
- Q10. What are the software requirement elicitation techniques? Explain FAST, QFD and Use case approach.

ASSIGNMENT NO.3

- Q1. If a module has logical cohesion what kind of coupling is this module likely to have with others?
- Q2. Compare the object oriented and function oriented approaches to software design?
- Q3. Differentiate between top-down and bottom-up designing techniques?
- Q4. Describe dependence matrix. How it is affected by coupling and cohesion?
- Q5. Why is a design a two level process? Why should the system design be furnished before starting the detailed design rather than starting the detailed design right after the requirement?
- Q6. Define error, fault and failure; bring out the difference between each with a suitable example?
- Q7. What is software reliability? How it is different from Hardware reliability? Why reliability is a critical issue in case of software?
- Q8. Calculate the values of Software Metrics N, V, E for a program to find factorial?
- Q9. Suppose the initial failure intensity is 50 failure/CPU hours, the failure intensity decay parameter is 0.01/failure. We assume that 100 failure been exempted. Calculate:
- Current intensity
 - Decrement of failure intensity per failure.
 - Number of failure experienced for the logarithmic process model at 50 and 100 CPU hour of execution.
- Q10. Explain the calendar time component with its relationship with execution time?

ASSIGNMENT NO.4

- Q1. Differentiate between Reverse engineering and Reengineering? Describe various steps of Reverse engineering process in detail?
- Q2. Describe the levels of testing and goals at each level?
- Q3. What is a test plan and what does a typical test plan contains?
- Q4. Write short notes on psychology of testing and mutation testing?
- Q5. Explain the following: a) Verification b) Validation.
- Q6. Discuss the important objectives of testing software system? Can this objective be achieved 100%?
- Q7. Explain the following with example
- a) Basic path testing
 - b) Control structure testing?
- Q8. Write short notes on:
- a. Configuration Management
 - b. Software Versions
 - c. User Documentation
 - d. Regression Testing
- Q9. Describe the following Maintenance Models with the help of diagram:
- a. Quick fix
 - b. Interactive enhancement
 - c. Boehm's
- Q10. What is Debugging? How it is different from Testing? What is Alpha and Beta Testing?
- Q11. Will exhaustive testing guarantee that the program is 100% correct? Comment
- Q12. Consider a program for the determination of the nature of roots of a quadratic equation. Design the boundary value test case and cost test case.