

(2½ hours)

[Total Marks: 75]

- N. B.: (1) All questions are compulsory.  
(2) Make suitable assumptions wherever necessary and state the assumptions made.  
(3) Answers to the same question must be written together.  
(4) Numbers to the right indicate marks.  
(5) Draw neat labeled diagrams wherever necessary.  
(6) Use of Non-programmable calculators is allowed.

1. **Attempt any two of the following:** 10  
a. Explain Boehm's principle for examining how to staff for software project.  
b. Explain the three levels of processes and its attributes.  
c. What are the five basic parameters that are involved in estimating the cost of a software project?  
d. Explain the five symptoms of a project that is headed for trouble.
2. **Attempt any two of the following:** 10  
a. List out the life-cycle phases of modern software development process. State the objectives of each phase.  
b. Briefly explain the different artifacts in the management set.  
c. Explain the technical perspective of software architecture.  
d. Map the process exponent parameters of the COCOMO II model to the principles of a modern process.
3. **Attempt any two of the following:** 10  
a. What is a workflow? Describe the major workflows involved in software development.  
b. Write short note on life-cycle architecture milestone. List the engineering artifacts available at the life-cycle architecture milestone.  
c. What is work breakdown structure? What are the issues associated with conventional work breakdown structure?  
d. Write short note on minor milestones in a project life-cycle.
4. **Attempt any two of the following:** 10  
a. With the help of diagram explain the default roles and responsibilities in a software line-of-business organization.  
b. Briefly explain the four important disciplines that are critical to the management context and the success of a modern iterative development process.  
c. What is configuration baseline? What are the different types of software change?  
d. Explain the activities of software management team over the project life cycle.
5. **Attempt any two of the following:** 10  
a. Explain the quality indicators that provide an indication of the quality of software system.  
b. Define metrics. List out the basic characteristics of a good metric.

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- c. Summarize process discrimination that result from difference in stakeholder cohesion.
- d. With the help of diagram explain the two primary dimensions of process variability.

6. Attempt any two of the following:

10

- a. With the help of diagram explain the difference between the progress profile of a modern project and conventional project.
- b. Explain how a software cost model should be structured to best support the estimation of a modern software process.
- c. Briefly explain the culture shifts in order to avoid friction in transitioning to modern software process.
- d. How does balancing the top 10 software management principles achieve balance in software economics equation?

7. Attempt any three of the following:

15

- a. State Boehm's top 10 principles about conventional software management performance.
- b. Write short note on requirement and design set.
- c. Explain top-down and bottom-up approach of cost and schedule estimating process.
- d. Explain the automation aids and tool components that support the process workflows.
- e. Define the following terms  
i) Earned value ii) Actual Cost iii) Cost variance iv) Expenditure plan v) Schedule variance
- f. List the characteristics of modern iterative development framework. Explain the steps to follow to transition to a mature iterative development process.