(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 the 5 improvements to the basic waterfall model.
  b. How does adversarial stakeholder relationships cause difficulties in requirements specification?
  c. Explain the three generations of software economies.
  d. Explain the important trends in improving the software economics.

2. **Attempt *any two* of the following:**   10
  a. Enlist and explain any 10 principles of conventional software engineering.
  b. Explain the primary objectives, essential activities and primary evaluation criteria of the Inception phase of the software development lifecycle.
  c. What is design set? How is it evaluated, assessed and measured?
  d. Explain the three different aspects of an architecture from a management perspective.

3. **Attempt *any two* of the following:**   10
  a. What is workflow? Explain top-level workflows.
  b. What are the various concerns of the different stakeholders in the major milestones?
  c. What is WBS? What information structure does it provide?
  d. Explain the bottom up approach of the cost and schedule estimating process.

4. **Attempt *any two* of the following:**   10
  a. Discuss the roles and responsibilities of default line-of-business organization.
  b. Explain the artifacts, responsibilities and life cycle focus of the software development team.
  c. Explain the three levels of process required in process automation,
  d. How does round trip engineering help to maintain consistency and traceability?

5. **Attempt *any two* of the following:**   10
  a. Give an overview of the seven core metrics.
  b. Explain the management metric – work and progress.
  c. Differentiate the process primitives that result from difference in project size.
  d. Give the differences in artifacts between small commercial project and large complex project.

6. **Attempt *any two* of the following:**   10
  a. How does continuous integration result in robust and maintainable design?
  b. Discuss the software management best practices.
  c. Explain the major improvements in next-generation software cost estimation models.
  d. Explain the various culture shifts with reference to modern process transition.

[TURN OVER]

7. **Attempt _any three_ of the following:** 15
a. What is process? Explain three levels of process and their attributes.
b. Explain a typical release description document.
c. How does periodic status assessment serve as project snapshots?
d. How is the software project team evolution over the life cycle emphasized in each phase?
e. Explain the characteristics of a good metric.
f. Explain how denouement ensures the perfect transition to modern processes.

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