Q.P. Code: 36156

(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 three* of the following: **15**

a. Define software engineering. Explain the Software Development Life Cycle (SDLC) steps in brief.
b. Explain the classification of the software requirements.
c. What are the components of software process? Explain.
d. Explain the structure of software requirement document.
e. Write short note on spiral model.
f. What are the principles of agile method?

2. Attempt *any three* of the following: **15**

a. State and explain the emergent systems properties with example.
b. What is legacy system? Explain it with the help of diagram.
c. Explain the simple critical system with suitable example.
d. Explain the importance of feasibility study in requirements engineering process.
e. Write short note on
   (i) Context model.
   (ii) Object model.
f. Explain requirement validation process checks on the requirements in the requirement document.

3. Attempt *any three* of the following: **15**

a. Write short note on architectural design decisions.
b. Write short note on modular decomposition styles.
c. Explain user interface design process with the help of diagram.
d. Explain the risk management process.
e. Write short note on project scheduling.
f. What is quality assurance? What are the quality standards types? Explain.

4. Attempt *any three* of the following: **15**

a. Define verification and validation. Explain software inspection in v & v process.
b. Write short note on component testing.
c. Explain the test automation.
d. Write short note on Function Point (FP) and Line of Code (LOC) measures.
e. Explain the Cost Constructive Model (COCOMO) with the formula for computing duration of project and manpower efforts for project.
f. Explain the software cost estimation technique.

[TURN OVER]

5. Attempt *any three* of the following: 15

a. Describe the classification of process.
b. Explain the CMMI process improvement framework.
c. Explain the services as a reusable components.
d. Explain the application framework.
e. Write short note on commercial-off-the-shelf (COTS) product reuse.
f. What are the architectural patterns for distributed systems? Explain Master-Slave architecture.

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