

Mid Sem Exam
 CSL7090 Software and Data Engineering
 Department of Computer Science and Engineering
 Indian Institute of Technology Jodhpur

Duration: 2 Hour

Date: 18-Sep-2025

Time: 10:30 AM

Marks: ~~90~~ 60

- Any kind of plagiarism may result in zero marks in the Minor component.
- Write your answers concisely and precisely. Unnecessary content may lead to negative marking. It is recommended to draw diagrams, schematics and explain your solutions in bullet points.

| S. No. | Question | Marks |
|--------|--|-------|
| 1 | The Roots of Architecture <i>"A house without pillars may crumble one day, A program without structure may soon go astray. From modules to systems, from concept to chart, Tell me why architecture is the software's heart. Analyze its role beyond coding lines— What strength does it add as the system refines?"</i> | 10 |
| 2 | The Layered Mystery <i>"Like onions in layers, or cakes tier by tier, One hides the other, yet all must appear. Data to logic, then UI above— This pattern is simple, yet tricky to love. Explain how layering improves design grace, But where might it fail in a turbulent race?"</i> | 10 |
| 3 | The Many Ways to Connect <i>"A server that listens, a client that speaks, Or peers that are equals, no master it seeks. A broker who bridges, or pubs sending news, While subs only wait for the data they choose. Compare these designs with their strengths side by side— When scaling and failing, which one would you guide?"</i> | 10 |
| 4 | The Song of Microservice and SOA <i>"Small ships in a fleet, each with its own sail, Or services joined in a grand enterprise tale. Microservice is nimble, but complex to steer, SOA is older, yet still held dear. Evaluate these models in handling change fast, Which future-proof choices are likely to last?"</i> | 10 |
| 5 | The 4+1 Riddle <i>"One view shows the logic, the classes, the plan, Another the process, machines as they ran. The physical maps hardware, the dev view the code, The scenario shows stories the system has told. Why does this model unite them so well? Analyze its use in design's carousel."</i> | 10 |
| 6 | The Architect's Dilemma <i>"Patterns and tactics, a box full of tools, Yet choosing the wrong one can break all the rules. You stand as designer at a forked road ahead— Pick wisely the pattern, or chaos will spread. Discuss how context decides what to use, And why one-size-fits-all is a dangerous ruse."</i> | 10 |