

Time 3 hours

Marks 80

**Note: Question No. 1 is Compulsory****Attempt any 3 Questions from the Remaining Questions.****Q.1****20**

- Explain Capability Maturity Model.
- Explain layered structured of software Engineering? How quality of software can be affected by wrong selection of Process, method and tool
- What is agility? How agile development help develop quality software
- What are the different design principles?

**Q.2**

- Explain Spiral model. How prototyping is used in spiral model **10**
- Explain Scrum agile development model **10**

**Q.3**

- Difference between Alpha and Beta Testing, Verification and Validation, White box and Black Box testing **10**
- Draw CFG and calculate cyclomatic complexity for the given PDL **10**  
 if(c1 or c2 and c3) s1;  
 else while (c4) s2;  
 s3;

**Q.4**

- What are the different requirement engineering tasks? Why identifying software requirements is difficult? **10**
- Explain includes and extends in use case diagram with example **05**
- An application for performing arithmetic operations is to be developed (addition, subtraction, multiplication, division) on two digit numbers. Draw context diagram and DFD level 1. **05**

**Q.5.**

- Explain risk management process. Prepare RMMM plan for the identified risk "Team members will leave the project in between the schedule" **10**
- What is the need of SCM in software engineering? Explain change control **10**

**Q.6.**

- Estimate minimum time required for the given project

| Task              | T1 | T2 | T3 | T4 | T5    | T6 | T7    |
|-------------------|----|----|----|----|-------|----|-------|
| Dependency        | -- | T1 | T6 | T2 | T1,T4 | -  | T1,T6 |
| Duration in weeks | 4  | 2  | 4  | 4  | 2     | 4  | 2     |

- Explain quality attributes in detail