

- N.B. (1) Question No.1 is **compulsory**, solve any **three** questions from **remaining** questions.
 (2) **All** questions carry **equal** marks.
 (3) Specify your answers with neat **diagrams** and **examples** wherever **necessary**.

- Q1** (a) What is the intent of Software Engineering? **05**
 (b) Explain Generic Process Model **05**
 (c) Explain in brief different static and dynamic UML models **05**
 (d) Explain in brief different debugging techniques **05**
- Q2** (a) Explain Waterfall and Incremental Model. How there are different. In which situation you will use these models **10**
 (b) Compare Prototype and Spiral Models **10**
- Q3** For an Organization with employee strength of 5000 employees having 20 branches across world, Document Management system is to be developed. On an average 20 thousand documents are uploaded every day by its employees. The employee can upload the document, remove the document and online edit the uploaded document. Using Machine Learning the uploaded documents is to be categorized and stored in relevant folders on the servers. The system should provide employee registration and login facility. The system should analyze the uploaded document and notify the administrator regarding objectionable contents. The administrator can remove the objectionable document. The warning message to the employee who uploaded the objectionable document should be send. The daily report of uploaded and deleted document is to be prepared. As per requirement required documents can be downloaded from the system. **20**
- Draw Use Case, Activity Diagram, Class and Deployment Diagram for the given scenario
- Q4** (a) Explain guidelines for good design. What are quality attributes? **10**
 (b) Explain design concepts **10**
- Q5** (a) Design test cases to find maximum of 3 numbers **10**
 (b) Draw CFG and find cyclomatic complexity for the given PDL **10**
 s1;
 while (c1) s2;
 do s3; while (c2);
 s4;
- Q6** (a) Identify two risks for your Master's Program and prepare RMMM plan **10**
 (b) Explain Service Oriented Architecture **10**

Time: 03 Hours

Marks: 80

[N.B: Attempt any four questions]

1. (a) Explain Readers -Writers synchronization problem in Distributed operating system 10
(b) Explain and analyze Raymond's tree based algorithm 10
2. (a) Describe two phase commit protocol of fault tolerance 10
(b) Explain Distributed Database System. What is the serializability condition in DDDBS? 10
3. (a) Write a note on cloud OS 10
(b) Define Real Time System. Explain types of real time task with example 10
4. (a) Write the Ho-Ramamurthy's centralize deadlock detection algorithm 10
(b) Explain priority inversion in RTOS 10
5. (a) Write classifications of agreement problems in Distributed system 10
(b) Explain different issues of load Distribution 10
6. (a) What are the ways of implementing backward error recovery? Explain in detail. 10
(b) Explain Rate monotonic scheduling algorithm in RTOS 10
