

- 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) Define Software and explain its characteristics **05**  
 (b) Explain layered structure of Software Engineering **05**  
 (c) What is QFD **05**  
 (d) What are the limitations of LOC metric to measure size of the software **05**

- Q2** (a) What is Cleanroom Software Engineering **10**  
 (b) Explain different phases of Unified Process **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) Explain different testing strategies **10**  
 (b) Draw CFG for the PDL and find cyclomatic complexity **10**  
 s1;  
 s2;  
 if(c1 or c2 and c3) s3; else s4;  
 s5;  
 do s6; while(c4);  
 s7;

- Q6** (a) Identify two risks for your ASE paper and prepare RMMM plan **10**  
 (b) What is software reuse? How it affects productivity and quality of software **10**

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