

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

**CLASS: MCA  
BRANCH: CSE**

**SEMESTER : II  
SESSION : SP/2025**

**SUBJECT: CA415 SOFTWARE ENGINEERING PRINCIPLES**

**TIME: 3 Hours**

**FULL MARKS: 50**

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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|--------|---|-----|-----|
| Q.1(a) | Why is the documentation given importance in software development?  | [5] | 1 1 |
| Q.1(b) | Discuss Spiral model with suitable diagram. Give its merits and demerits.   | [5] | 1 2 |
| Q.2(a) | Explain the IEEE standard of SRS and enumerate the qualities of good SRS.   | [4] | 2 2 |
| Q.2(b) | What is software requirement? Briefly differentiate between functional and non-functional requirements. Identify and briefly describe four types of requirements that may be defined for a computer-based system. | [6] | 2 4 |
| Q.3(a) | Compare between conventional and object-oriented design approaches with suitable examples.  | [5] | 3 4 |
| Q.3(b) | Construct the sequence diagram and class diagram for automated teller machine (ATM) transactions of a bank.   | [5] | 3 6 |
| Q.4(a) | What is black box Testing? Recommend a method to design test cases with example.  | [5] | 4 5 |
| Q.4(b) | Why do we need acceptance testing? Illustrate the process of acceptance testing.  | [5] | 4 3 |
| Q.5(a) | What is Software metrics? Assess the functions of Software metrics with examples.   | [5] | 5 5 |
| Q.5(b) | Why do we need to plan quality in software development? What are different elements in quality plan? Elaborate them.  | [5] | 5 3 |

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