| Roll No. | | | | | | | | | | | | |
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# PRESIDENCY UNIVERSITY

## BENGALURU

**Make up Examinations – December 2025**

**Date:** 31 – 12- 2025 **Time:** 09:30am – 12:30pm

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|---|---|---|
| **School:** SOIS | **Program:** MCA | |
| **Course Code:** CSA4003 | **Course Name:** Software Engineering | |
| **Semester**: MK | **Max Marks**: 100 | **Weightage**: 50% |

| **CO - Levels** | **CO1** | **CO2** | **CO3** | **CO4** | **CO5** |
|---|---|---|---|---|---|
| **Marks** | **24** | **24** | **26** | **26** | **-** |

**Instructions:**

*(i) Read all questions carefully and answer accordingly.*

*(ii) Do not write anything on the question paper other than roll number.*

## Part A

**Answer ALL the Questions. Each question carries 2marks.** **10Q x 2M=20M**

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|---|---|---|---|---|
| 1. | List myths associated with Software Engineering. | **2 Marks** | **L1** | **CO1** |
| 2. | Explain user story in Agile methodology. | **2 Marks** | **L2** | **CO1** |
| 3. | Discuss the purpose of data flow diagram (DFD) in software design process. | **2 Marks** | **L2** | **CO2** |
| 4. | Explain the importance of designing of reuse. | **2 Marks** | **L2** | **CO2** |
| 5. | Discuss different Test Strategies for conventional Software. | **2 Marks** | **L2** | **CO3** |
| 6. | Differentiate between manual and automated testing. | **2 Marks** | **L2** | **CO3** |
| 7. | Mention any two techniques used in black box testing. | **2 Marks** | **L1** | **CO3** |
| 8. | Discuss reverse engineering**.** | **2 Marks** | **L2** | **CO4** |
| 9. | Explain the significance of risk management in software development. | **2 Marks** | **L2** | **CO4** |
| 10. | A university's student portal is being upgraded to include an online exam module for remote assessments. Mention two potential risks associated with this update. | **2 Marks** | **L2** | **CO4** |

## Part B

**Answer the Questions.** **Total Marks 80M**

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|---|---|---|---|---|---|
| **11.** | **a.** | Prepare a SRS documents for the Online Book Store App. | **10 Marks** | **L2** | **CO1** |
| | **b.** | Describe the purpose and components of a Software Requirements Document (SRS). Discuss why it is essential in the development process and what risks arise if it is poorly prepared. | **10 Marks** | **L2** | **CO1** |
| | | **Or** | | | |
| **12.** | **a.** | Describe the ethical responsibilities of software engineers when working with sensitive user data. How can they make sure that privacy and security are maintained during development? | **10 Marks** | **L2** | **CO1** |
| | **b.** | Choose an appropriate SDLC model for a large, complex project which requires risk management and frequent releases. Give reasons for your choice | **10 Marks** | **L2** | **CO1** |

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| **13.** | **a.** | Discuss the key considerations in designing a responsive web application? Explain with theoretical principles applied to a food delivery system. | **10 Marks** | **L2** | **CO2** |
| | **b.** | Explain the significance of class-based modeling in object-oriented design. Create a theoretical model for a library system. | **10 Marks** | **L2** | **CO2** |
| | | **Or** | | | |
| **14.** | **a.** | Describe the role of UML (Unified Modelling Language) in software design. Explain how different UML diagrams (such as use case, sequence, and class diagrams) contribute to effective software modelling. What is swim-lane diagram? What are the advantages of using UML in system design? | **10 Marks** | **L2** | **CO2** |
| | **b.** | Explain with an example of a class diagram for a shopping cart system. | **10 Marks** | **L2** | **CO2** |

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| **15.** | **a.** | A password input field must accept passwords that **are** between 6 and 12 characters long (inclusive)**.** Write test cases using Boundary Value Analysis to validate this field. | **10 Marks** | **L3** | **CO3** |
| | **b.** | Explain the major elements of a Software Quality Assurance framework. | **10 Marks** | **L2** | **CO3** |
| | | **Or** | | | |
| **16.** | **a.** | begin<br>int x, y; | **10 Marks** | **L3** | **CO3** |

| | | | | | |
|---|---|---|---|---|---|
| | | input(x);<br>if(x < 100)<br>if(x % 2 == 0)<br>y = x * 2;<br>else<br>y = x + 10;<br>else<br>y = 0;<br>output(y);<br>end<br><br>a. Draw the CFG for the given code.<br>b. Calculate cyclomatic complexity<br>c. Find the independent paths<br>d. Write the Test cases. | | | |
| | **b.** | Discuss the main activities involved in the Software Configuration Management (SCM) process | **10 Marks** | **L2** | **CO3** |

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| **17.** | **a.** | Explain the different phases of maintenance in the context of software Engineering. How do these phases contribute to the overall efficiency of the system? | **10 Marks** | **L2** | **CO4** |
| | **b.** | Explain reverse engineering in software along with its applications and benefits with examples. | **10 Marks** | **L2** | **CO4** |
| **Or** | | | | | |
| **18.** | **a.** | Explain various methods used for software cost estimation. | **10 Marks** | **L2** | **CO4** |
| | **b.** | Explain the COCOMO (Constructive Cost Model) in detail. Describe its different types and how they are used to estimate effort and cost in software projects. Support your answer with suitable equations and examples. | **10 Marks** | **L2** | **CO4** |