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| **Program:** | S.Y.B.Sc CS | **Semester:** III | **Program Code:** UGCS02 |
| **Course:** | Software Engineering | | **Course Code:** NUCS302 |
| **Duration:** | 1 Hour | **Examination Pattern:** NEP-Autonomous-External | **Max. Marks:** 30 |

**Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Draw neat diagrams wherever necessary.
4. CO (Course Outcome), KL (Knowledge Level).

**Examination:**
**REGULAR**

| Q. 1 | | **Attempt any TWO of the following.** | [10] | CO's | KL's |
|---|---|---|---|---|---|
| | (a) | Define Software Engineering. State any four characteristics of software. | | CO1 | L1 |
| | (b) | Explain Waterfall Model along with its advantages and disadvantages. | | CO2 | L3 |
| | (c) | Explain the major activities involved in the Requirements Engineering Process. | | CO3 | L2 |
| | (d) | Draw a Sequence Diagram for the process of a customer placing an order in an online shopping system. | | CO4 | L3 |
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| **Q. 2** | | **Attempt any TWO of the following.** | [10] | CO's | KL's |
| | (a) | Define coupling and cohesion in software design. | | CO1 | L1 |
| | (b) | Develop appropriate black-box test cases for a Login Module using Equivalence Partitioning and Boundary Value Analysis. | | CO4 | L3 |
| | (c) | Analyze the differences between Verification and Validation and explain how both contribute to software quality. | | CO3 | L4 |
| | (d) | Explain Software Quality Assurance (SQA) activities and the role of Software Reviews and Formal Technical Reviews (FTR). | | CO4 | L2 |
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| **Q. 3** | | **Attempt any TWO of the following.** | [10] | CO's | KL's |
| | (a) | Define Capability Maturity Model (CMM) and list its maturity levels. | | CO1 | L1 |
| | (b) | Explain any three requirements elicitation techniques with examples | | CO3 | L2 |
| | (c) | Explain the difference between White-box Testing and Black-box Testing with suitable examples. | | CO1 | L2 |
| | (d) | A college wants to develop an online admission system where requirements are clearly defined and unlikely to change. Select an appropriate software development model and justify your choice. | | CO2 | L5 |

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