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**21CST601**

**Sixth Semester B. E. Degree Semester End Examination (SEE)**

**Model Question Paper – 3**

**SOFTWARE ENGINEERING AND PROJECT MANAGEMENT**

**Time: 3 Hours] [Maximum Marks: 100**

**Instructions to Students:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Q No** | | **Questions** | **Marks** | **CO** | **RBT**  **Cognitive**  **Level** |
| 1 | a) | “Scrum is a subset of Agile”. Justify. | 5 | CO1 | L3 |
| b) | Describe concurrent development model used in software development. | 8 | CO1 | L3 |
| c) | List and explain seven principles that focuses on software engineering practice as a whole. | 7 | CO1 | L2 |
| **OR** | | | | | |
| 2 | a) | With a neat diagram, explain the process of XP for developing a software. | 7 | CO1 | L2 |
|  | b) | Compare and contrast waterfall and evolutionary software development model. | 8 | CO1 | L3 |
|  | c) | Describe a generic process framework for software engineering. | 5 | CO1 | L2 |
|  | | | | | |
| 3 | a) | Give the IEEE standard structure of an SRS. Prepare an SRS for Agricultural Information Management System which will be helpful for farmers. | 8 | CO2 | L4 |
| b) | With suitable example, describe the Scenario-based modeling. | 7 | CO2 | L2 |
| c) | Develop use cases for the following:  (i) Train Reservation System  (ii) Unified Insurance Management System | 5 | CO2 | L4 |
| **OR** | | | | | |
| 4 | a) | Define requirements engineering. List and explain seven distinct tasks of requirements engineering. | 8 | CO2 | L2 |
| b) | Discuss the significance of use cases in requirements engineering process. Design various use cases for Super market management system. | 7 | CO2 | L5 |
| c) | How to negotiate and validate requirements? Illustrate with examples. | 5 | CO2 | L3 |
|  | | | | | |
| 5 | a) | List and explain all the fundamental software design concepts. | 10 | CO3 | L2 |
| b) | Develop a complete architectural design for Safe home product. Also identify various components used in Safe home product. | 10 | CO3 | L4 |
| **OR** | | | | | |
| 6 | a) | Describe basic design principles applicable to Component level design. | 8 | CO3 | L3 |
| b) | With suitable examples, describe Architectural styles and Architectural Genres. | 8 | CO3 | L2 |
| c) | Design architectural context diagram for the following systems:  (i) Stock Market Trading System  (ii) Consumer Products Management System | 4 | CO3 | L4 |
|  | | | | | |
| 7 | a) | With a neat diagram, describe the debugging process. | 6 | CO4 | L2 |
| b) | With suitable example, explain basis path testing in detail. | 6 | CO4 | L2 |
| c) | Describe Validation and System Testing with examples. | 8 | CO4 | L3 |
| **OR** | | | | | |
| 8 | a) | Explain a strategic approach to software testing. | 8 | CO4 | L2 |
| b) | Explain graph based testing methods and boundary value analysis with suitable real time examples. | 8 | CO4 | L3 |
| c) | Design various test cases for unified seat reservation system. | 4 | CO4 | L4 |
|  | | | | | |
| 9 | a) | The decisions made by senior management can have a significant impact on the effectiveness of a software engineering team. Provide five examples to illustrate that this is true. | 6 | CO5 | L4 |
| b) | How to establish a software metrics program? Describe with various steps and goals. | 7 | CO5 | L2 |
| c) | Describe Empirical estimation models used during estimation of software projects. | 7 | CO5 | L2 |
| **OR** | | | | | |
| 10 | a) | “Effective software project management focuses on four P’s”. Justify this statement with suitable analogy. | 8 | CO5 | L4 |
| b) | Describe any three software metrics used for software measurement. | 6 | CO5 | L3 |
| c) | Briefly explain various decomposition techniques used during software project estimations. | 6 | CO5 | L2 |

1. Answer FIVE FULL questions as per choice.