

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR (AUTONOMOUS)

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**QUESTION BANK (DESCRIPTIVE)****Subject with Code: SOFTWARE ENGINEERING AND TESTING (20CS0512)****Course & Branch: M.Tech - CSE****Year & Sem: Regulation: I-M.Tech – I-Sem****UNIT –I****SOFTWARE PROCESS MODELS**

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|----|---|---|-----------|-------|
| 1 | a | Define Software. How Software evolves for a period of cycle. Explain? | [L2][CO1] | [6M] |
| | b | Explain the changing Nature of Software in brief. | [L2][CO1] | [6M] |
| 2 | a | How Legacy software is used in modern era. Explain. | [L1][CO1] | [6M] |
| | b | How a generic view of process changes the life of software. Explain | [L2][CO1] | [6M] |
| 3 | | What is a layered Technology in Software Engineering? Explain | [L2][CO1] | [12M] |
| 4 | | Explain how Framework activities helps to solve a problem using umbrella Activities | [L2][CO1] | [12M] |
| 5 | | What is CMMI and explain about CMMI models in details | [L1][CO1] | [12M] |
| 6 | | Explain in detail about Process Assessment and different approaches in it | [L2][CO1] | [12M] |
| 7 | a | Explain about PSP & TSP framework activities | [L2][CO1] | [12M] |
| | b | Distinguish – Product, Process and Product in Software terminology. | [L3][CO1] | [12M] |
| 8 | | How Waterfall model differs from Increment Model. Depict and Explain | [L2][CO1] | [12M] |
| 9 | | Depict how RAD model and spiral model helps in solving a design issue | [L3][CO1] | [12M] |
| 10 | | Explain any one Specialized Process Models in detail | [L2][CO1] | [12M] |

UNIT –II**REQUIREMENT ENGINEERING**

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|----|---|--|-----------|-------|
| 1 | a | List out the seven core principles of Software Engineering | [L1][CO2] | [6M] |
| | b | What is SE practice, list out the types and explain the essence or nature of SE Practice | [L1][CO2] | [6M] |
| 2 | a | Explain in detail about Communication Principles/Practices | [L2][CO2] | [6M] |
| | b | Explain in detail about Planning Principles/Practices | [L2][CO2] | [6M] |
| 3 | | Define Requirement Engineering and explain about Requirements Engineering Tasks | [L2][CO2] | [12M] |
| 4 | | Explain in detail about Analysis Model building and Elements of Analysis Model | [L2][CO2] | [12M] |
| 5 | | What is Use-case? Why it is used? How it helps in analyzing the requirements? Explain with an example | [L1][CO2] | [12M] |
| 6 | | Explain the procedure to initiate the RE process | [L2][CO2] | [12M] |
| 7 | a | Explain about Analysis Patterns and structure of Analysis pattern | [L2][CO2] | [6M] |
| | b | Explain the types of Requirements (functional and non-functional) | [L2][CO2] | [6M] |
| 8 | a | Explain in detail about Modeling (Analysis) Principles/Practices | [L2][CO2] | [6M] |
| | b | Explain in detail about Modeling(Design) Principles/Practices | [L3][CO2] | [6M] |
| 9 | | Explain in detail about Construction(before/while & after coding) Principles/Practices | [L2][CO2] | [12M] |
| 10 | | What is Requirement Negotiating and how it is done. Explain the process | [L2][CO2] | [12M] |

UNIT – III**ANALYSIS MODELING AND DESIGN &IMPLEMENTATION**

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|----|---|--|-----------|-------|
| 1 | a | Brief out the analysis in Modeling and List out the elements of analysis model | [L2][CO3] | [6M] |
| | b | What is the importance of Scenario Based Diagram? Explain. | [L1][CO3] | [6M] |
| 2 | a | What is the use of Data Attributes and how it is created for a new model | [L1][CO3] | [6M] |
| | b | Distinguish DFD and CFD | [L2][CO3] | [6M] |
| 3 | | Explain in detail about Data Modelling Concepts | [L2][CO3] | [12M] |
| 4 | | How Object Oriented Analysis helps to Design a Software Model. Explain in detail | [L2][CO3] | [12M] |
| 5 | | How Scenario based Modeling is used in Analysis and Design while modeling | [L2][CO3] | [12M] |
| 6 | | How Flow Oriented Modeling is used in Analysis and Design while modeling | [L2][CO3] | [12M] |
| 7 | a | What is Architectural Design and how it is used to Design a Software | [L1][CO4] | [6M] |
| | b | Explain the process of Detailed Design with neat sketch | [L4][CO4] | [6M] |
| 8 | a | Distinguish C-Spec and P-Spec and how it helps in design phase | [L2][CO4] | [6M] |
| | b | What is Design Process and how it is carried out for solving a software problem | [L4][CO4] | [6M] |
| 9 | | Explain in detail about User interface Design. How it plays a important role in Designing a software. Brief about the Golden rules of UID. | [L4][CO4] | [12M] |
| 10 | | How to improve the Quality of a Software using Quality Design model in implementation Process of a Software Model. | [L4][CO4] | [12M] |

UNIT – IV**INTRODUCTION TO TESTING AND FLOW GRAPHS AND PATH TESTING**

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|----|--|--|-----------|-------|
| 1 | a | What is the Purpose of Testing and Explain the levels in it clearly | [L1][CO4] | [6M] |
| | b | How model for a Testing is created and explain its workflow with the environment | [L4][CO4] | [6M] |
| 2 | a | Distinguish Testing and Debugging in detail | [L2][CO4] | [6M] |
| | b | How Bugs affect us from mild to catastrophic in our day-to-day life. | [L3][CO4] | [6M] |
| 3 | Explain in detail about the Dichotomies in Software Testing | | [L2][CO4] | [12M] |
| 4 | How Taxonomy of Bugs relate with the Testing Methodologies, explain in brief | | [L2][CO4] | [12M] |
| 5 | What are the Consequences of Bugs and how it affects the humans? | | [L1][CO4] | [12M] |
| 6 | What is the use of CFG? Explain how the elements of CFG is used in Path Testing | | [L1][CO5] | [12M] |
| 7 | a | What are the types of Loops in Testing and How it helps in Path Testing | [L1][CO4] | [6M] |
| | b | List out the Application of Path Testing in detail | [L4][CO4] | [6M] |
| 8 | a | Explain the process of Fundamental Path Selection Criteria with example | [L2][CO5] | [6M] |
| | b | Explain the role of Predicates and Path Predicates in doing path testing | [L2][CO4] | [6M] |
| 9 | How Path Instrumentation is done explain with the help of example | | [L2][CO4] | [12M] |
| 10 | How Path Sensitizing is carried out in Path Testing explain the two types in it. | | [L2][CO5] | [12M] |

UNIT – V**TRANSACTION FLOW TESTING, DATAFLOW TESTING AND DOMAIN TESTING**

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|----|---|--|-----------|-------|
| 1 | a | What is Transaction Flow? How Transaction Flow Graph is used in TFT | [L1][CO5] | [6M] |
| | b | Explain the complications in Transaction Flow Graph | [L2][CO5] | [6M] |
| 2 | a | What is the involvement of Path Instrumentation and Path Sensitizing in TFT | [L1][CO5] | [6M] |
| | b | How Data Flow Machines helps in Data Flow Testing. | [L1][CO5] | [6M] |
| 3 | | Explain in detail about Transaction Flow Testing Techniques | [L2][CO6] | [12M] |
| 4 | | What are the strategies in Data Flow Testing | [L2][CO6] | [12M] |
| 5 | | How DFG is used in DFT. Explain the 2 types of DFG. | [L2][CO6] | [12M] |
| 6 | | Explain in detail about Data Flow Testing Strategies in detail | [L2][CO6] | [12M] |
| 7 | a | What is Data Flow Model, explain the components in it with an example of DFG | [L2][CO6] | [6M] |
| | b | What is Slicing and Dicing and how it is used in DFT. | [L1][CO6] | [6M] |
| 8 | a | What is Domain Dimensionality? How it helps in Domain Testing. | [L1][CO6] | [6M] |
| | b | Write a short note on Domain Errors. | [L1][CO6] | [6M] |
| 9 | | Explain in detail about Nice and Ugly Domains. | [L2][CO6] | [12M] |
| 10 | | Explain in detail about Interface Testing and How it is done on Domains | [L2][CO6] | [12M] |

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