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|  | **GEETHANJALIINSTITUTEOFSCIENCE&TECHNOLOGY**  (**ANAUTONOMOUS INSTITUTION**)  **(Approved by AICTE, New Delhi & Affiliated to JNTUA, Ananthapuramu) (Accredited by NAAC with “A” Grade, NBA(EEE,ECE&ME)&ISO9001:2008 Certified Institution)** |
| **QUESTION BANK (DESCRIPTIVE)**  **Subject Name: Software Project Management Subject Code: 22A0522TC**  **Course & Branch :** B.Tech & CSE(CS)  **Year & Semester: IV B.Tech I Semester Regulation:** RG22 | |

**Unit-1**

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| **S.No** | **2 Marks Questions (Short)** | **[BT Level][CO][Marks]** |
| **1** | Define software and project | L1, CO1, 2 M |
| **2** | Define software project management | L1, CO1, 2 M |
| **3** | What is an incremental software development model? | L1, CO1, 2 M |
| **4** | List various layered technology layers. | L1, CO1, 2 M |
| **5** | List various software development life cycle phases | L1, CO1, 2 M |
| **6** | What is the purpose of the requirement analysis phase? | L1, CO1, 2 M |
| **7** | What is one major disadvantage of the waterfall model? | L1, CO1, 2 M |
| **8** | List the phases of the waterfall model. | L1, CO1, 2 M |
| **9** | Give two examples of evolutionary process models. | L1, CO1, 2 M |
| **10** | What is the main characteristic of the Concurrent model? | L1, CO1, 2 M |

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| **S.No** | **Descriptive Questions (Long)** | **[BT Level] [CO][ Marks]** |
|  | **(a)Explain the scope of software engineering and its importance in modern** | L2, CO1,6 M |
|  | **computing.** |  |
|  | **(b) What are the economic aspects of software engineering? How does** |  |
| **1** | **software development contribute to business growth?** | L2, CO1,6 M |
|  | (a) Discuss the historical evolution of software engineering and its impact on | L2, CO1,6 M |
|  | current practices. |  |
| **2** | (b) Describe the different aspects of software maintenance and their significance. | L2, CO1,6 M |
|  | **(a)Explain the concept of layered technology in software engineering with a** | L2, CO1,6 M |
|  | **diagram.** |  |
|  | **(b)Describe the different phases of the Software Development Life Cycle** |  |
| **3** | **(SDLC) with a suitable diagram.** | L2, CO1,6 M |

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|  | **(a)Explain the Waterfall model with a neat diagram. What are its advantages** | L2, CO1,6 M |
|  | **and disadvantages?** |  |
|  | **(b) Explain the working of the Incremental model with a suitable diagram.** |  |
| **4** | **How does it improve over the Waterfall model?** | L2, CO1,6 M |
|  | **(a)Describe the Evolutionary model of software development. How does it** | L2, CO1,6 M |
|  | **help in reducing project risks?** |  |
| **5** | **(b)Explain in detail about V-model.** | L2, CO1,6 M |
| **6** | **Compare the Waterfall, Prototyping and Spiral model. List the features of each model, advantages and disadvantages and a type of application where the**  **model will be acceptable.** | L2, CO1, 12 M |
|  | **(a) Explain the Concurrent development model with a diagram. How does it** | L2, CO1,6 M |
|  | **handle parallel development?** |  |
|  | **(b) Explain the Spiral Model of software development with a neat diagram.** |  |
| **7** | **Why is it considered a risk-driven model?** | L2, CO1,6 M |
| **8** | 1. **Explain the role of specification and design in software engineering. Why are they crucial in the development process?** 2. **Discuss the importance of team programming in software engineering. What challenges does it address?** | L2, CO1, 6 M  L2, CO1, 6 M |
| **9** | How does the Spiral Model different from the Waterfall and Incremental models in terms of flexibility and risk handling? | L2, CO1, 12 M |
|  | 1. Explain the role of software processes, methods, and tools in software | L2, CO1, 6 M |
|  | engineering. |  |
|  | (b) Compare Incremental and Evolutionary process models. Which one is |  |
| **10.** | more suitable for modern software development? | L2, CO1, 6 M |

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| **S.No** | **Descriptive Questions (Long)** | **[BTLevel][CO][Marks]** |
|  | **(a)Explain the principles of the Agile Manifesto. How do they influence** | L2, CO2, 6 M |
|  | **software development?** |  |
| **1** | **(b)What is agility in software development? Explain how agile processes improve software development.** | L2, CO2, 6 M |
|  | 1. **What is Agile Modeling (AM)? How does it support agile development?** 2. **What are the five core values of Extreme Programming (XP)? Explain their importance.** | L2, CO2, 6 M |
| **2** | L2, CO2, 6 M |
|  | 1. **Explain the Adaptive Software Development (ASD) model. How does** | L2, CO2, 6 M |
|  | **it different from other agile models?** |  |
| **3** | **(b)What is the Dynamic Systems Development Method (DSDM)? Explain its key principles.** | L2, CO2, 6 M |
|  | **(a)Explain the key principles of Lean Software Development (LSD) and** | L2, CO2, 6 M |
|  | **how it reduces waste.** |  |
| **4** | **(b) Describe the Feature-Driven Development (FDD) model. How does it focus on feature-based planning?** | L2, CO2, 6 M |
| **5** | **Explain the management spectrum in software project management. What are its four key factors?** | L2, CO2, 12 M |
|  | (a)Discuss the role of people in software project management. How do | L2, CO2, 6 M |
|  | team dynamics impact success? |  |
| **6** | (b) What is Industrial XP? How does it extend traditional XP practices for larger-scale projects? | L2, CO2, 6 M |
| **7** | **(a) What is Scrum? Describe its key components, such as roles, artifacts,** | **L2, CO2, 6 M** |

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|  | **and events.**  **(b) Describe the Crystal methodology in Agile development. How does it differ from other Agile models?** | **L2, CO2, 6 M** |
|  | (a)Describe the Agile Unified Process (AUP). How is it an adaptation of | L2, CO2, 6 M |
|  | the Rational Unified Process (RUP)? |  |
| **8** | (b) Discuss the role of people in software project management. Why is team management critical for project success? | L2, CO2, 6 M |
|  | **(a) Explain the XP process. How does it promote flexibility and** | L2, CO2, 6 M |
|  | **continuous improvement?** |  |
| **9** | **(b) Discuss the XP debate. What are the major criticisms and advantages of Extreme Programming?** | L2, CO2, 6 M |
|  | (a) Explain the four P’s of the management spectrum (People, Product, | L2, CO2, 6 M |
|  | Process, and Project). Why are they important? |  |
| **10** | (b) How does defining a product clearly impact project success? Discuss key factors to consider in software product management. | L2, CO2, 6 M |

**Unit-3**

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| **S.No** | **2 Marks Questions (Short)** | **[BT Level][CO][ Marks]** |
| **1** | Define Lines of Code (LOC) metric. | L1, CO3, 2 M |
| **2** | What is a Function Point (FP) in software measurement? | L1, CO3, 2 M |
| **3** | What are software process metrics? | L1, CO3, 2 M |
| **4** | What is the difference between size-oriented and function-oriented metrics? | L1, CO3, 2 M |
| **5** | Define Defect Removal Efficiency (DRE). | L1, CO3, 2 M |
| **6** | What is meant by software quality metrics? | L1, CO3, 2 M |
| **7** | What is Process-Based Estimation? | L1, CO3, 2 M |
| **8** | What is software project planning? | L1, CO3, 2 M |
| **9** | Define software scope in project management. | L1, CO3, 2 M |
| **10** | Define Problem-Based Estimation | L1, CO3, 2 M |

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| **S.No** | **Descriptive Questions (Long)** | **[BT Level][CO][Marks]** |
| **1** | Compare size-oriented and function-oriented software metrics with examples. | L2, CO3, 12 M |
| **2** | Explain LOC (Lines of Code) and Function Point (FP) metrics. How are they | L2, CO3, 12 M |

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|  | used in software measurement? |  |
| **3** | How can software quality be measured? Discuss different software quality metrics. | L2, CO3, 12 M |
| **4** | Explain the concept of software sizing and its role in project estimation. | L2, CO3, 12 M |
| **5** | . Compare Problem-Based Estimation and Process-Based Estimation with examples | L2, CO3, 12 M |
| **6** | How does Process-Based Estimation work? Explain with an example | L2, CO3, 12 M |
| **7** | What is software scope? Why is it important in project estimation? | L2, CO3, 12 M |
| **8** | Discuss different types of resources required for a software project. | L2, CO3, 12 M |
| **9** | Describe how decomposition techniques help in accurate project estimation. | L3, CO3, 12 M |
| **10** | Describe software project estimation and its significance in project management | L2, CO3, 12 M |

**Unit-4**

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| **S.No** | **2 Marks Questions (Short)** | **[BT Level][CO][ Marks]** |
| **1** | What is COCOMO II model? | L1, CO4, 2 M |
| **2** | What is an empirical estimation model? | L1, CO4, 2 M |
| **3** | How does COCOMO II differ from COCOMO I? | L1, CO4, 2 M |
| **4** | What is a story point in Agile estimation? | L1, CO4, 2 M |
| **5** | Define velocity in Agile project management. | L1, CO4, 2 M |
| **6** | What is a Make/Buy decision in software engineering? | L1, CO4, 2 M |
| **7** | Why is effort distribution important in software project management? | L1, CO4, 2 M |
| **8** | What is a task set in project scheduling? | L1, CO4, 2 M |
| **9** | What is a timeline chart in project scheduling? | L1, CO4, 2 M |
| **10** | What is Earned Value Analysis (EVA)? | L1, CO4, 2 M |

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| **S.No** | **Descriptive Questions (Long)** | **[BT Level] [CO][ Marks]** |
| **1** | Explain the structure of empirical estimation models with examples. | L2, CO4, 12 M |

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| **2** | Describe the COCOMO II model and its different modes of estimation. | L2, CO4, 12 M |
| **3** | Compare COCOMO I and COCOMO II models. | L3, CO4, 12 M |
| **4** | How is software estimation done in Agile development? Explain any two Agile estimation techniques. | L3, CO4, 12 M |
| **5** | What is a Make/Buy decision in software engineering? What factors influence it? | L2, CO4, 12 M |
| **6** | Explain the relationship between people and effort in software project scheduling. | L2, CO4, 12 M |
| **7** | What is a task set? Explain its role in software project scheduling with an example. | L2, CO4, 12 M |
| **8** | What is a timeline chart in project scheduling? How is it used to manage software projects? | L3, CO4, 12 M |
| **9** | Explain Earned Value Analysis (EVA) and how it helps in project tracking. | L2, CO4, 12 M |
| **10** | Describe the process of defining a task network and its significance in project planning. | L3, CO4, 12 M |

**Unit-5**

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| **S.No** | **2 Marks Questions (Short)** | **[BT**  **Level][CO][ Marks]** |
| **1** | What are the four main risk strategies in risk management? | L1, CO5, 2 M |
| **2** | What are software risks? | L1, CO5, 2 M |
| **3** | What is risk projection? | L1, CO5, 2 M |
| **4** | What is risk refinement? | L1, CO5, 2 M |
| **5** | What are the components of the RMMM plan? | L1, CO6, 2 M |
| **6** | What is Software Configuration Management (SCM)? | L1, CO6, 2 M |
| **7** | What is a baseline in Software Configuration Management? | L1, CO6, 2 M |
| **8** | What is the role of an SCM repository? | L1, CO6, 2 M |
| **9** | What is version control in SCM? | L1, CO6, 2 M |
| **10** | What is status reporting in SCM? | L1, CO6, 2 M |

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| **S.No** | **Descriptive Questions (Long)** | **[BT Level] [CO][ Marks]** |
| **1** | Explain the four main risk strategies in risk management with examples. | L2, C05, 12 M |
| **2** | What are software risks? Classify and explain different types of software risks. | L2, C05, 12 M |
| **3** | What is risk refinement? Explain how risk refinement helps in effective risk management. | L2, C05, 12 M |
| **4** | Describe the process of risk identification in software engineering. What are the different techniques used for identifying risks? | L2, C05, 12 M |
| **5** | What are the key components of the RMMM plan? Explain its significance in software project management. | L2, C05, 12 M |
| **6** | What are the key elements of a Configuration Management System? Explain each element in detail. | L2, C05, 12 M |
| **7** | Describe the role of the SCM repository. What are its key features and contents? | L2, C05, 12 M |
| **8** | What is version control in SCM? Explain different types of version control systems with examples. | L2, C05, 12 M |
| **9** | What is a configuration audit in SCM? Explain the types and significance of configuration audits. | L3, C06, 12 M |
| **10** | What is status reporting in SCM? Explain how it helps in software development and maintenance. | L2, C06, 12 M |

Signature of the Staff :

Signature of Department Academic Committee Member 1:

Signature of Department Academic Committee Member 2:

Signature of Department Academic Committee Member 3: