

**II B. Tech I Semester Regular Examinations, March - 2021**  
**SOFTWARE ENGINEERING**  
 (Computer Science & Engineering)

Time: 3 hours

Max. Marks: 75

Answer any **FIVE** Questions each Question from each unit  
 All Questions carry **Equal** Marks  
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|----|-----------------------------------------------------------------------------------------------------------------|------|
| 1  | a) What is software process? Elaborate on the changing nature of software in detail.                            | [8M] |
|    | b) Explain spiral model with its merits and demerits.                                                           | [7M] |
| Or |                                                                                                                 |      |
| 2  | a) Explain about specialized process models.                                                                    | [8M] |
|    | b) Explain software development life cycle. Discuss various activities during SDLC.                             | [7M] |
| 3  | a) Explain about Agile Process Models.                                                                          | [8M] |
|    | b) State and explain various aspects in requirements validation process.                                        | [7M] |
| Or |                                                                                                                 |      |
| 4  | a) Describe five desirable characteristics of a good software requirement specification document.               | [8M] |
|    | b) Explain the structure of Software Requirements document.                                                     | [7M] |
| 5  | a) Explain about Scenario-Based Modeling.                                                                       | [8M] |
|    | b) Write about architectural styles and patterns.                                                               | [7M] |
| Or |                                                                                                                 |      |
| 6  | a) Explain about Class based modelling.                                                                         | [8M] |
|    | b) Explain interface analysis and interface design steps.                                                       | [7M] |
| 7  | a) Distinguish between coupling and cohesion? How do they effect software design?                               | [8M] |
|    | b) For a Case study of your choice show the architectural and component design.                                 | [7M] |
| Or |                                                                                                                 |      |
| 8  | a) List and explain different kinds of architecture styles and patterns.                                        | [8M] |
|    | b) Explain the process of mapping dataflow into software architecture.                                          | [7M] |
| 9  | a) What is black box testing? Explain the technique specifying rules and its usage with the help of an example. | [8M] |
|    | b) Explain the COCOMO model for estimation.                                                                     | [7M] |
| Or |                                                                                                                 |      |
| 10 | a) Explain the methods of System Testing.                                                                       | [8M] |
|    | b) Distinguish between error and failure. Which of the two is detected by testing? Justify.                     | [7M] |

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- 1 a) Explain waterfall model with its merits and demerits. [8M]  
 b) Discuss in brief about different software myths and their consequences. [7M]  
 Or
- 2 a) Explain in detail Evolutionary process model. [8M]  
 b) Explain the Software Process Framework. [7M]
- 3 a) What is an Agile Process and explain its principles? [8M]  
 b) Describe five desirable characteristics of a good software requirement specification document? [7M]  
 Or
- 4 a) Explain Extreme Programming (XP) process in detailed. [8M]  
 b) What are the differences between functional requirements and non-functional requirements? [7M]
- 5 a) Explain about data modelling concepts in detailed with suitable example. [8M]  
 b) Explain about Flow-oriented modelling and Context-level DFD for the Safe Home security function? [7M]  
 Or
- 6 a) Explain Pattern for Requirement Modelling and Draw a process model showing how a requirements review might be organized with Actuator sensor example. [8M]  
 b) Discuss about Discovering Analysis Patterns with suitable example. [7M]
- 7 a) What is design? Describe the difference between conceptual design and technical design? [8M]  
 b) Explain the design guidelines that can be used to produce “good quality” classes or reusable classes. [7M]  
 Or
- 8 a) Define the module coupling and explain different type of coupling. [8M]  
 b) Discuss the objective of modular software design. What are the effects of module coupling and cohesion? [7M]
- 9 a) List the golden rules of user interface design. [8M]  
 b) What is software testing? Discuss role of software testing during software lifecycle and why it is so difficult? [7M]  
 Or
- 10 a) What are various kinds of functional testing? Describe any one in detailed. [8M]  
 b) Describe structural testing in detailed with suitable example. [7M]

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|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 1  | a) Explain iterative model with its merits and demerits.                                                                                                                                                            | [8M] |
|    | b) A department of computer science has usual resources and usual users for these resources. A software is to be developed so that resources are assigned without conflict. Draw a DFD specifying the above system. | [7M] |
|    | Or                                                                                                                                                                                                                  |      |
| 2  | a) Discuss the significance and use of requirement reengineering. What are the problems in the formulation of requirements?                                                                                         | [8M] |
|    | b) Give an overview of unified process model.                                                                                                                                                                       | [7M] |
| 3  | a) What is an Agile Process and explain its principles?                                                                                                                                                             | [8M] |
|    | b) State and explain various aspects in requirements validation process.                                                                                                                                            | [7M] |
|    | Or                                                                                                                                                                                                                  |      |
| 4  | a) Explain about Design Modeling Principles in detailed.                                                                                                                                                            | [8M] |
|    | b) What are the activities of requirements elicitation and analysis? Explain.                                                                                                                                       | [7M] |
| 5  | a) Explain about data modelling concepts in detailed with suitable example.                                                                                                                                         | [8M] |
|    | b) Write about architectural styles and patterns.                                                                                                                                                                   | [7M] |
|    | Or                                                                                                                                                                                                                  |      |
| 6  | a) Discuss about data modelling concepts.                                                                                                                                                                           | [8M] |
|    | b) Discuss about Discovering Analysis Patterns with suitable example.                                                                                                                                               | [7M] |
| 7  | a) What is design? Describe the difference between conceptual design and technical design?                                                                                                                          | [8M] |
|    | b) Define module cohesion and explain different type of cohesion?                                                                                                                                                   | [7M] |
|    | Or                                                                                                                                                                                                                  |      |
| 8  | a) What is system modelling? Explain the process of creating models and the factors that should be considered when building models.                                                                                 | [8M] |
|    | b) Discuss the objective of modular software design. What are the effects of module coupling and cohesion?                                                                                                          | [7M] |
| 9  | a) List the golden rules of user interface design.                                                                                                                                                                  | [8M] |
|    | b) Explain the various strategies of design. Which design strategy is most popular and practical?                                                                                                                   | [7M] |
|    | Or                                                                                                                                                                                                                  |      |
| 10 | a) Distinguish between error and failure. Which of the two is detected by testing? Justify.                                                                                                                         | [8M] |
|    | b) What is black box testing? Explain the technique specifying rules and its usage with the help of an example.                                                                                                     | [7M] |

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| 1  | a) Discuss in brief about different software myths and their consequences.                                                                                                   | [8M] |
|    | b) Explain waterfall model with its merits and demerits.                                                                                                                     | [7M] |
|    | Or                                                                                                                                                                           |      |
| 2  | a) Explain in detail Evolutionary process model.                                                                                                                             | [8M] |
|    | b) Explain software development life cycle. Discuss various activities during SDLC.                                                                                          | [7M] |
| 3  | a) Explain about Agile Process Models its principles?                                                                                                                        | [8M] |
|    | b) State and explain various aspects in requirements validation process.                                                                                                     | [7M] |
|    | Or                                                                                                                                                                           |      |
| 4  | a) Describe five desirable characteristics of a good software requirement specification document.                                                                            | [8M] |
|    | b) Explain Extreme Programming (XP) process in detailed.                                                                                                                     | [7M] |
| 5  | a) Explain about Flow-oriented modelling and Context-level DFD for the web-based e-marketing system such as "Amazon"?                                                        | [8M] |
|    | b) Write about architectural styles and patterns.                                                                                                                            | [7M] |
|    | Or                                                                                                                                                                           |      |
| 6  | a) Explain about Class based modelling.                                                                                                                                      | [8M] |
|    | b) Discuss about Discovering Analysis Patterns with suitable example.                                                                                                        | [7M] |
| 7  | a) Distinguish between coupling and cohesion? How do they effect software design?                                                                                            | [8M] |
|    | b) What is system modelling? Explain the process of creating models and the factors that should be considered when building models.                                          | [7M] |
|    | Or                                                                                                                                                                           |      |
| 8  | a) List and explain different kinds of architecture styles and patterns.                                                                                                     | [8M] |
|    | b) Explain the process of mapping dataflow into software architecture.                                                                                                       | [7M] |
| 9  | a) What is white box testing? Explain the technique specifying rules and its usage with the help of an example.                                                              | [8M] |
|    | b) Using a schematic diagram and suitable example to show the order in which the following are estimated in the COCOMO estimate technique: Cost, Effort, Duration, and Size. | [7M] |
|    | Or                                                                                                                                                                           |      |
| 10 | a) What is the purpose of Delphi method? State advantages and disadvantages of the method.                                                                                   | [8M] |
|    | b) Distinguish between error and failure. Which of the two is detected by testing? Justify.                                                                                  | [7M] |