

R18

Code No: 155DB

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, March - 2024

SOFTWARE ENGINEERING

(Common to CSE, IT, ECM, ITE, AI&DS, CSD)

Time: 3 Hours

Max. Marks: 75

- Note:** i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

- 1.a) What do you mean by software myths? [2]
- b) What is process assessment, and how is it conducted in software engineering? [3]
- c) What are structured methods in the context of system modelling? [2]
- d) How do requirements management tools and techniques facilitate the organization and tracking of requirements throughout the software development lifecycle? [3]
- e) How does UML facilitate the representation and visualization of software architectures? [2]
- f) How do class diagrams depict relationships and interactions among classes in a system? [3]
- g) What do you understand by equivalence partitioning in software testing? [2]
- h) Differentiate between validation testing and verification testing in software engineering. [3]
- i) Define software reliability. [2]
- j) Define software quality assurance and its role in software development processes. [3]

PART – B

(50 Marks)

- 2.a) Discuss incremental process models and provide examples of their application in real-world projects.
- b) Compare and contrast personal and team process models in software development. [5+5]

OR

- 3.a) What are evolutionary process models, and how do they differ from traditional approaches like the waterfall model?
 - b) Explain how process models facilitate collaboration and communication among project stakeholders. [5+5]
- 4.a) Define functional and non-functional requirements in software engineering. Provide examples of each.
 - b) Write a software requirement specification document for the Android to-do list application. [5+5]

OR

- 5.a) What role does validation play in ensuring the correctness and completeness of software requirements? Discuss different validation techniques.
- b) What is a feasibility study, and why is it conducted during the requirements engineering process? Discuss the key factors considered in a feasibility study. [5+5]

- 6.a) Explain the design process in software engineering. What are the key phases involved, and how do they contribute to the overall development lifecycle?
- b) Discuss the role of software architects in defining and implementing architectural designs. [5+5]

OR

- 7.a) Describe the design model in software engineering. How does it serve as a blueprint for implementing and maintaining software systems?
- b) Describe basic structural modelling techniques in UML. [5+5]

- 8.a) Compare and contrast black-box and white-box testing techniques. Provide examples of scenarios where each technique would be most appropriate.
- b) Evaluate the effectiveness of using cyclomatic complexity as a metric for measuring the complexity of source code. [5+5]

OR

- 9.a) Describe common debugging techniques and strategies for identifying and fixing software defects efficiently.
- b) Define software quality metrics and explain why they are essential for assessing the overall quality of software products. [5+5]

- 10.a) Define software measurement and explain its importance in the software development process.
- b) Discuss the differences between reactive and proactive risk management strategies. Provide examples of situations where each strategy would be most appropriate. [5+5]

OR

- 11.a) Explain the concept of Risk Mitigation, Monitoring, and Management (RMMM) in software engineering.
- b) Discuss the benefits of conducting FTRs and the roles of stakeholders involved. [5+5]

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