Register No.: ..... Name: .....

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SEVENTH SEMESTER INTEGRATED MCA DEGREE EXAMINATION (R), DECEMBER 2023
(2020 SCHEME)

Course Code: **20IMCAT407**

Course Name: **Advanced Software Engineering**

Max. Marks: **60** **Duration: 3 Hours**

PART A

(Answer all questions. Each question carries 3 marks)

1. "The process of project planning is iterative in nature". Justify the statement.
2. What are the factors affecting software pricing?
3. Explain the need and types of software standards to develop a high quality product.
4. Assume that you are the manager of a small project. What codelines and baselines would you define for the project?
5. Explain the scrum sprint cycle with a diagram.
6. Explain how the principles underlying agile methods lead to the accelerated development and deployment of software.
7. Describe the attributes of dependable processes.
8. Design a layered protection architecture to store the records of individual patients.
9. Explain a Model-View-Controller (MVC) architecture with a diagram.
10. Design the various stages of systems engineering.

PART B

(Answer one full question from each module, each question carries 6 marks)

MODULE I

11. Explain the agile planning game with a diagram. (6)

OR

12. Describe the software project management process. (6)

MODULE II

13. Why are the project review and inspection an effective technique for discovering errors in a software product? Explain in detail. (6)

OR

14. Explain the core operations in Git version control system to manage a software project. How can you clone a repository using Git? (6)

MODULE III

15. a) Describe continuous integration, delivery and deployment (CI/CD/CD) in DevOps automation. (3)
    b) Explain the core practices of Kanban methodology. (3)

OR

16. a) Discuss the test driven development process in detail. (3)
    b) What are the benefits of involving users in release testing at an early stage in the testing process? Are there disadvantages in user involvement? (3)

MODULE IV

17. What are the types of threats that have to be considered in cyber resilience planning? Provide examples of the controls that organizations should put in place to counter those threats. (6)

OR

18. Explain the hazard driven requirement specification in detail. (6)

MODULE V

19. "Component-based software engineering is a reuse-based approach". Justify the statement. (6)

OR

20. Explain the various logical stages in the service engineering process. (6)

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