

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

FIRST SEMESTER M.C.A DEGREE EXAMINATION (S), MAY 2022

(2021 SCHEME)

Course Code: 21CA103

Course Name: Advanced Software Engineering

Max. Marks: 60

Duration: 3 Hours

PART A

(Answer all questions. Each question carries 3 marks)

1. Why is incremental development a most effective approach for developing business software systems?
2. What is the difference between plan driven development and agile development?
3. What is continuous integration? Why do you need it?
4. Differentiate change management and release management.
5. When would you recommend against the use of an agile method for developing a software system? Explain your answer.
6. Why is Ansible the most preferred devOps tool for automation?
7. What are the characteristics and attributes of a dependable system?
8. State the importance of safety engineering.
9. What is service engineering? What are its stages?
10. Write a short note on reactive systems.

PART B

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

MODULE I

11. a) What is requirements engineering? (2)
b) Explain the requirements engineering process with a neat sketch. (4)

OR

12. a) Why is agile planning important? (2)
b) Explain COCOMO cost modelling for estimation. (4)

MODULE II

13. a) What are the principal concerns regarding software quality management? (3)
b) Comment on the role and importance of metrics and measurement in software engineering. (3)

OR

14. a) How do you work with the repository's history in Git? Explain with an example. (3)

- b) How do you organize your repository with branches in Git? Explain with suitable examples. (3)

MODULE III

15. a) "Testing can only detect the presence of error, not their absence". Do you agree with this statement? Justify your answer. (3)
b) What is regression testing? Explain how the use of automated tests and a testing framework such as JUnit simplifies regression testing. (3)

OR

16. a) What are the principles of agile methods Scrum and Extreme Programming? Mention its differences. (3)
b) Write a short note on Application Performance Monitoring process in DevOps. (3)

MODULE IV

17. a) Compare and contrast Probability of Failure on Demand and Rate of Fault Occurrence. (3)
b) Write a short note on reliability testing. (3)

OR

18. a) Explain security as a business issue. What is the need of security policies? (3)
b) Elaborate on the activities involved in resilience engineering. (3)

MODULE V

19. a) What is Component based software engineering? (3)
b) Explain the basic elements of a component model. (3)

OR

20. a) Write a short note on sociotechnical systems. Comment on its layered structure. (3)
b) What are the factors that affect system lifetimes? (3)
