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SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

SEVENTH SEMESTER INTEGRATED MCA DEGREE EXAMINATION (S), FEBRUARY 2024
(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. List the different umbrella activities that occur throughout the software process.
2. Depict the general process model for reuse-based development.
3. What are the different ways in which quality can be viewed?
4. How do branches work in repository?
5. What are the three phases of test-driven development?
6. List the types of user testing.
7. List the four principal dimensions to dependability.
8. What are the different safety terminologies?
9. What are the benefits of software reuse?
10. What are the incompatibilities that occur in component composition?

PART B

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

MODULE I

11. a) Explain requirements elicitation and analysis process. (3)
    b) What are the two open-source issues that have to be considered in a company involved in software development? (3)

OR

12. a) Explain the project scheduling process. (3)
    b) Explain the different factors affecting software pricing. (3)

MODULE II

13. a) Illustrate continuous integration. (3)
    b) Elaborate on three fundamental configuration management activities. (3)

OR

14.	a)	List out Garvin's quality dimensions and explain each.	(4)
	b)	Give a short note on system building process.	(2)

MODULE III

15.	a)	What is the overall strategy for software testing?	(3)
	b)	Describe about unit test environment.	(3)

OR

16.	a)	Explain the life cycle of scrum.	(3)
	b)	What are the key metrics to manage a Kanban workflow?	(3)

MODULE IV

17.	a)	Identify six consumer products that are likely to be controlled by safety-critical software systems.	(3)
	b)	Explain the differences between an attack and a threat in the context of computer security.	(3)

OR

18.	a)	Explain layered protection architecture with a neat sketch.	(3)
	b)	Explain socio-technical resilience. How could a resilient system be designed?	(3)

MODULE V

19.	a)	List and explain the advantages of using a distributed approach to systems development.	(3)
	b)	Explain service-oriented architecture with a neat diagram.	(3)

OR

20.	a)	List and explain the three logical stages in the service engineering process.	(3)
	b)	Explain the different real-time architectural patterns.	(3)

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