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

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

FIRST SEMESTER M.TECH DEGREE EXAMINATION (Regular), FEBRUARY 2022
(COMPUTER SCIENCE & SYSTEM ENGINEERING)
(2021 Scheme)

Course Code : **21SE104-C**

Course Name: **Computer Systems Engineering**

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

PART A
(Answer all questions. Each question carries 3 marks)

1. Explain waterbed effect.
2. Discuss about the principle of escalating complexity.
3. What is the role of page map address register in paging.
4. Compare latent and active faults in computer system.
5. Define Before-or-After atomicity with suitable example.
6. What do you mean by data base constraints?
7. Define the term "Cache Snooping".
8. "Security is a negative goal". Justify in the context of data base security.

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

MODULE I

9. Explain about the functions of Software System Engineering (SwSE). (6)

OR

10. Elaborate on Systems Engineering with reference to a real-world scenario. (6)

MODULE II

11. When modularity between a client and a service is enforced, there is no way for errors in the implementation of the service to propagate to its clients. True or False? Explain. (6)

OR

12. Explain RPC. How does RPC differ from normal procedure call? (6)

MODULE III

13. Describe the concept of modularity in terms of multilevel memory. (6)

OR

14. Explain Belady's anomaly with an example (6)

MODULE IV

15. What do you mean by error masking? And also explain about Software fault and Hardware fault   (6)

OR

16. a) Explain the relation between MTTR, MTTF and MTBF   (4)
    b) The system operates for 9hrs in a shift.3 failures occurred. Adding all failures, we have 180 minutes (3 hrs). Calculate MTBF.   (2)

MODULE V

17. Explain about Fault tolerance in memory systems.   (6)

OR

18. With a neat sketch explain in detail about Replicated state machine.   (6)

MODULE VI

19. Explain Diffie -Hellman Key exchange protocol with an example.   (6)

OR

20. Define Threats with relevance to Information Security. How will you classify threats?   (6)

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