

Time:(3 Hours)

marks:80

N.B: 1) Question number 1 is compulsory.

2) Attempt **any three** out of the remaining.

3) Assume suitable data if **necessary** and justify the assumptions.

4) Figures to the **right** indicate full marks.

Q 1

- A Explain how Monotonic read consistency model is different than Read your Write consistency model [5]
- B What is 1:M and M:1 group communication? [5]
- C Differentiate between NOS DOS and Middleware in the design of distributed systems [5]
- D What is fault tolerance? Explain failure models. [5]

Q 2

- A Explain code migration and its techniques. [10]
- B Explain Bully election algorithm with suitable example. [10]

Q 3

- A Explain Raymond's algorithm for mutual exclusion. [10]
- B What are different data centric consistency models [10]

Q 4

- A Explain different load estimation and process transfer policies used by load balancing algorithms. [10]
- B What are physical clocks? Explain any one physical clock synchronization algorithm. [10]

Q 5

- A What are different issues and goals related to distributed systems? [10]
- B Explain file caching schemes [10]

Q 6

- A Write a short note on Replication and the types of it. [10]
- B What is RPC? Explain working of RPC in detail [10]