

Be Sem VIII (choice base) Summer 2026 [CMPN]

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 replication helps in achieving fault tolerance. [5]
B List and describe five challenges faced in distributed systems. [5]
C Explain how load balancing benefits a distributed system. [5]
D Elaborate key Features of Global Scheduling algorithm. [5]

Q 2

- A Explain Remote Method Invocation with suitable diagram [10]
B Explain the Chandy Misra Hass algorithm? Compare with centralized deadlock detection approaches. [10]

Q 3

- A Analyze and contrast two election algorithms, and recommend the best option for large distributed environments. [10]
B How do logical clocks help in distributed systems, and what is the working of Lamport's logical clock algorithm? [10]

Q 4

- A Describe how Raymond's algorithm ensures mutual exclusion. [10]
B Explain the working of Distributed File System with its applications. [10]

Q 5

- A Describe how data replication works in a DFS and explain its benefits. [10]
B Discuss design issues in load balancing algorithm in resource management. [10]

Q 6 Write a short note on

- A Process resilience [10]
B Code migration [10]
