

**CMR ENGINEERING COLLEGE: : HYDERABAD****UGC AUTONOMOUS****IV–B.TECH–I–Semester End Examinations (Supply) – April – 2025****DISTRIBUTED SYSTEMS****(CSE)****[Time: 3 Hours]****[Max. Marks: 70]****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 20 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART-A****(20 Marks)**

1. a) Define Distributed systems with an example. [2M]
- b) What is meant by resource sharing? Explain. [2M]
- c) Define bully algorithm. [2M]
- d) What are the Requirements of the distributed file systems? [2M]
- e) Write about Distributing debugging. [2M]
- f) Define data marshalling. [2M]
- g) State distributed file system requirements. [2M]
- h) Write the types of the transparency. [2M]
- i) Explain recovery of nested transactions. [2M]
- j) Define distributed deadlock. [2M]

**PART-B****(50 Marks)**

- 2.a) Describe the distributed computing as utility. [5M]
- b) What are the different benefits of resource sharing? Explain about its significance. [5M]

**OR**

3. Discuss the challenges of the distributed systems with their examples. [10M]

- 4.a) Explain different kinds of problems that are associated with the coordination and agreement in distributed systems. [5M]
- b) Explain how election is done when any particular system crashes. [5M]

**OR**

- 5.a) Demonstrate the design requirements for distributed architectures. [5M]
- b) Explain how events are ordering in real-time with neat sketch. [5M]

- 6.a) Write short notes on clocks, Events and Process states. [5M]
- b) Discuss about Global states. [5M]

**OR**

- 7.a) What are the features required for election Algorithms? [5M]
- b) Explain how election is done when any particular system crashes? [5M]
8. Explain optimistic concurrency control mechanisms in detail. [10M]

**OR**

- 9.a) Explain how distributed deadlocks can be detected. [5M]
- b) Explain how primary backup model of replication is fault tolerant. [5M]

10. Explain in which respects DSM is suitable or unsuitable for client server system. [10M]

**OR**

- 11.a) Explain about design and implementation issues of distributed shared memory. [4M]
- b) Explain Distributed shared memory Architecture and its types. [6M]

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