

Code No: 155EY

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B. Tech III Year I Semester Examinations, August/September - 2024****DISTRIBUTED SYSTEMS****(Computer Science and Engineering – Cyber Security)****Time: 3 Hours****Max. Marks: 75****Note:** i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A**(25 Marks)**

- 1.a) What is meant by inter process communications? [2]
- b) Differentiate between distributed system and a centralized system. [3]
- c) Define thread and a process. [2]
- d) What are the uses of access control lists? [3]
- e) What is the difference between server-based communication and peer-to-peer communication? [2]
- f) List different types of overlays. [3]
- g) What is the distributed deadlock? [2]
- h) What are nested transactions? [3]
- i) What are active and passive replications? [2]
- j) What are the differences between message passing systems and distributed shared memory system? [3]

PART – B**(50 Marks)**

2. Discuss about the key characteristics of the distributed systems. [10]
- OR**
3. What is Asynchronous transfer mode and discuss ATM protocol layers in detail. [10]
- 4.a) Compare and contrast monolithic kernel and micro kernel.
- b) Explain the functions of a distributed operating system. [5+5]
- OR**
5. Discuss “Communication between distributed objects” in detail. [10]
6. Write short notes on the following:
 - a) Features of peer-to-peer systems
 - b) Advantages of peer-to-peer systems over client-server architecture
 - c) Peer-to-Peer middleware. [3+3+4]
- OR**
7. Illustrate the procedure for Synchronizing Physical clocks for distributed systems. [10]

8. Describe the principles involved in distributed transactions concurrency control. [10]

OR

9. What is two - phase locking? Explain strict two-phase locking process in distributed systems. [10]

10. Discuss the 'Design and Implementation issues' of distributed shared memory. [10]

OR

11. "Primary backup model of replication is Fault Tolerant"? Justify your answer. [10]

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