Aliah University
End Semester Examination (Sping Semester) 2023
(For 4th Year 8th Semester B.Tech(CSE))

Paper Name: Distributed Systems   Full Marks: 80
Paper Code: CSEUGPE21B   Time: 3 hours

Group A (Answer all the questions)   10X1 =10

1. In distributed system, each processor has its own _____.
a) local memory b) clock c) both local memory and clock d) none of the mentioned

2. If one site fails in distributed system then_____.
a) the remaining sites can continue operating b) all the sites will stop working c) directly connected sites will stop working d) none of the mentioned

3. Network Operating system runs on_____.
a) server b) every system in the network c) both server and every system in the network d) none of the mentioned

4. Which technique is based on compile-time program transformation for accessing remote data in a distributed-memory parallel system?
a) cache coherence scheme b) computation migration c) remote procedure call d) message passing

5. Logical extension of computation migration is _____.
a) process migration b) system migration c) thread migration d) data migration

6. Processes on the remote systems are identified by_____.
a) host ID b) host name and identifier c) identifier d) process ID

7. Which routing technique is used in a distributed system?
a) fixed routing b) virtual routing c) dynamic routing d) all of the mentioned

8. In distributed systems, link and site failures are detected by _____.
a) polling b) handshaking c) token passing d) none of the mentioned

9. The capability of a system to adapt the increased service load is called _____.
a) scalability b) tolerance c) capacity d)none of the mentioned

10. Internet provides _____ for remote login.
a) telnet b)http c) ftp d)rpc

Group B (Answer any 5 questions)   5X6=30

1. i) Write the advantages of Ricart-Agarwala Algorithm.
   ii) Write the metrics used for measuring the performance of Ricart-Agarwala Algorithm (3+3)
2. Differentiate a) tightly coupled and loosely coupled system. b) wait-die and wound-wait. (3+3)
3. i) What are the conditions for correctness of distributed control algorithms?
   ii) Explain happened before relationship.   (3+3)
4. Differentiate between Logical and Physical clocks.   (6)
5. Write short notes on: i) a) Mutual Exclusion ii) Phantom deadlocks   (3+3)
6. Discuss the processor pool model briefly.   (6)

Group C (Answer any 4 questions)   4X 10=40

1. Explain the Election algorithm in detail.   (10)
2. Explain the Diffusion Computation based Algorithm for Distributed deadlock detection. (10)
3. How are the classifications of Mutual Exclusion algorithms done? Explain any two algorithms in detail.   (2+8)
4. What are the conditions for Distributed Termination Detection? Explain the Credit-Distribution based Termination Detection Algorithm.   (3+7)
5. Discuss the different approaches for distributed load balancing.   (10)