

**Total No. of printed pages = 3**

**63/2 (SEM-4) CSIT 4:1**

**2023**

**CSIT**

**(Theory Paper)**

**Paper Code : CSIT 4:1**

**(Distributed System)**

**Full Marks – 80**

**Pass Marks – 32**

**Time – Three hours**

**The figures in the margin indicate full marks  
for the questions.**

- 1. Answer the following questions : 2×5=10**
- (a) What is access point ?**
  - (b) Explain omega switch ?**
  - (c) What is multicasting ?**
  - (d) What is parameter marshaling ?**
  - (e) What is the multiprocessor and multicomputer system ?**

**[Turn over**

- (f) What is logical clock ?
- (g) What is publisher/subscriber system in event based architecture ?

2. Answer any *five* of the following questions :

3×5=15

- (a) Differentiate between process and thread.
- (b) Explain Remote Procedure Call.
- (c) Explain name resolution.
- (d) Explain message-oriented communication.
- (e) Explain the importance of replication in DS.
- (f) Explain tightly coupled and loosely coupled system.
- (g) Differentiate between synchronous and asynchronous communication ?

3. Answer any *five* of the following questions :

5×5=25

- (a) Explain layered and object-based architecture of DS.
- (b) Differentiate between structured naming and flat naming.
- (c) Illustrate the architectures for multi-threaded server.

- (d) Explain Names, Identifiers, and Addresses.
- (e) Explain token ring algorithm in brief.
- (f) What is the importance of virtualization in DS ?
- (g) Explain Berkley algorithm for clock synchronization.

4. Explain the following design goals for distributed system with example : 5×2=10

- (a) Transparency and (b) Scalability.

5. (a) Explain distributed three phase commit approaches in brief. 10

Or

- (b) Explain Lamport Timestamps for logical clock synchronization. 10

6. Write short notes on any *two* : 5×2=10

- (a) Grid computing
- (b) Replication in DS
- (c) Middleware