

Total No. of Questions : 8]

SEAT No. :

P274

[Total No. of Pages : 2

[6003] - 352

T.E. (Computer Engineering)

DISTRIBUTED SYSTEMS

(2019 Pattern) (Semester - I) (Elective - I) (310245 C)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, and Q7 or Q8.
- 2) Neat diagrams must be drawn whenever necessary.
- 3) Assume suitable data, if necessary.

Q1) a) What is clock synchronization? Explain in brief clock synchronization algorithms. **[6]**

b) What is mutual exclusion? Compare centralized and decentralized mutual exclusion algorithms. **[6]**

c) Explain how logical positioning of nodes is done in Gps location system. **[6]**

OR

Q2) a) Explain in detail lamport's logical clock. **[6]**

b) Explain with suitable example how bully election algorithm works. **[6]**

c) Explain gossip-based overlay construction of gossip-based contribution. **[6]**

Q3) a) Explain the following naming system of file system. **[6]**

i) flat naming.

ii) structured naming.

b) Explain file service architecture of distributed file systems. **[6]**

c) Explain with suitable example, Andrew file system. **[5]**

OR

Q4) a) What is attributed based naming? Explain. **[6]**

b) What are identifiers? Explain. **[6]**

c) Explain with suitable example, Suns network file system. **[5]**

P.T.O.

- Q5)** a) Differentiate between data - centric and client - centric consistency models. [6]
- b) Describe architecture of replicated data management. [6]
- c) Explain following terms w.r.t. replica management. [6]
- i) Content replication.
- ii) Content distribution.

OR

- Q6)** a) What is replication? Enlist reasons for replication. [6]
- b) Explain eventual consistency model. [6]
- c) Explain how replicated objects are managed by replica management. [6]
- Q7)** a) What is fault tolerance? Explain in short failure models. [6]
- b) Explain failure masking in distributed system. [6]
- c) Describe check pointing for recovery. [5]

OR

- Q8)** a) Describe RPC semantics in presence of failures. [6]
- b) Explain failure models in distributed system. [6]
- c) Describe atomic multicast for reliable group communication. [5]

