6E7136

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B.Tech. VI-Sem. (Main) Examination July - 2023
Computer Science and Engineering
6CS5-11 Distributed System (EI.I)
CS, IT

Time : 3 Hours Maximum Marks : 70

Instructions to Candidates:

*Attempt **all ten** questions from **Part A**, **five** questions out of **Seven** questions from **Part B** and **Three** questions out of **Five** questions from **Part C**.*

Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205).

PART - A

(Answer should be given up to 25 words only)

All questions are **compulsory.** (10×2=20)

1. What are the goals of a distributed system.
2. State the difference between distributed operating system and network operating system.
3. Explain working of RPC.
4. How distributed file system is different from centralized file system.
5. Explain concept of logical clocks.
6. How concurrency is handled in distributed system.
7. What is non uniform memory access model?
8. Explain distributed mutual exclusion.
9. Explain concept of faults in distributed agreement.
10. How data is handled in Distributed databases.

PART - B

(Analytical/Problem solving questions)

Attempt any **five** questions. (5×4=20)

1. Explain how micro kernels can be used to organize an operating system in a client - server fashion.
2. Explain transport level communication services for building distributed applications.
3. What is an object adapter?
4. Does using time stamping for concurrency control ensure serializability? Discuss.
5. Discuss connection less communication between client and server using sockets.
6. How state of a distributed system is recorded? Explain by suitable diagram.
7. Explain distributed shared memory with the help of suitable diagram.

PART - C

(Descriptive/Analytical/Problem Solving/Design questions)

Attempt any **Three** questions. (3×10=30)

1. Consider two CORBA systems, each with their own naming service. Outline how the integration may be performed.
2. a. Discuss side effects in coda's RPC2 system.
   b. Explain implementation and resolution of a coda file identifier.
3. Explain following strategies used for deadlock handling in distributed system :
   a. Deadlock prevention.
   b. Deadlock avoidance.
   c. Deadlock detection and Recovery.
4. Explain lamport's clock and vector clock with the help of suitable example.
5. With the help of suitable diagram, explain sender initiated and receiver initiated algorithms for dynamic load sharing and balancing in distributed system.