[Total No. of Questions - 9] [Total No. of Printed Pages - 3]

Dec.-23-0529

CS-602 (Distributed Operating System)

B.Tech. 6th (CBCS)

Time : 3 Hours **Max. Marks : 60**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Candidates are required to attempt five questions in all selecting one question each from sections A, B, C, D of the question paper and all the subparts of the questions in Section E.

SECTION - A

1. (a) What is Distributed Operating System? Discuss the issues in designing of Distributed Operating System. (5)

   (b) Explain the needs of Inter-process Communication (IPC) in the distributed operating system. (5)

2. (a) What is Computer Network? Compare the local area networks (LANs) and wide-area networks (WANs) with key characteristics of networks. (5)

   (b) Explain the model of Remote Procedure Call. (5)

SECTION - B

3. (a) Explain, why clock synchronization in distributed system is more complicated than in centralized system. (5)

   (b) Discuss the distributed algorithm for mutual exclusion. (5)

4,. (a) Discuss the role of clock synchronization algorithms in distributed system. Also discuss the working of Cristian's Algorithm. (5)

   (b) What is a "deadlock"? What are the four necessary conditions for a deadlock to occur? Give suitable examples to prove that if anyone of the four conditions is absent, no deadlock is possible. (5)

SECTION - C

5. (a) Explain the general architecture of distributed shared memory system. (5)

   (b) Discuss about the Strict Consistency Model and Sequential Consistency Model for distributed shared memory systems. (5)

6. (a) Discuss about the commonly used approaches for structuring the shared memory space of a distributed shared memory system. (5)

   (b) Describe the important issues involved in the design and implementation of distributed shared memory system. (5)

SECTION - D

7. (a) What are the specific features of distributed file system as compare to file system used in a single-processor system? Discuss. (5)

   (b) Discuss the file-accessing model of a distributed file system in brief. (5)

8. (a) What are the desirable features of a good distributed file system? Discuss. (5)

   (b) Discuss in brief about the file caching and file replication in distributed file system. (5)

SECTION - E (Compulsory)

9. (a) Why Distributed Operating Systems gaining popularity?

(b) Discuss the security issues in the implementation of RPC.

(c) Give the advantages of distributed system over the centralized systems.

(d) What is the significance of logical clock in distributed system?

(e) Discuss the concept of centralized approach for mutual exclusion.

(f) Why election algorithms are required in the distributed systems?

(g) What do you mean by Thrashing?

(h) What is role of Consistency model?

(i) What are the security issues in distributed file system?

(j) What are the commonly used file models in the distributed systems? Discuss in brief. (10×2=20)