H225

B. Tech. EXAMINATION, 2020

(Eighth Semester)

(Old Scheme) (Re-appear Only)

(IT)

IT410

DISTRIBUTED OPERATING SYSTEMS

Time : 2½ Hours]   [*Maximum Marks :* 100

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Four* questions in all. All questions carry equal marks.

1. (a) List the characteristics of Distributed Operating System. Why is it difficult to design these systems ?

   (b) What are the applications of Distributed Operating Systems ? Why is it advisable to use these systems as compared to centralized systems ?

2. (a) How is message passing achieved in a client server model ?

   (b) What is Group Communication ? List some of the issues involved in group communication.

3. (a) What are Threads ? How are threads organized in a process ? Also list the design issues for thread packages.

   (b) Compare the workstation model and processor model for processor allocation.

4. (a) Discuss the distributed file server interface, directory server interface and the semantics of file sharing.

(b) Explain the caching process in distributed file system. How is the cache consistency maintained in this case ?

5. (a) Discuss the Christian's and Berkley algorithm for clock synchronization.

(b) Discuss, how mutual exclusion is achieved in distributed systems.

6. (a) Show with complete diagram the transaction model for distributed systems.

(b) What is backward error recovery ? How is it done in distributed systems ?

7. (a) Describe page based distributed shared memory model.

(b) How is shared memory implemented using Switched based and Ring based multiprocessors ?

8. (a) Briefly describe the following :

(i) Weak consistency

(ii) Sequential consistency.

(b) Describe, how memory is managed in MACH.