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G18

B. Tech. EXAMINATION, May 2019

(Seventh Semester)

(B. Scheme) (Re-appear Only)

(CSE)

CSE461B

DISTRIBUTED OPERATING SYSTEMS

Time : 3 *Hours*] [*Maximum Marks :* 75

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 *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. (a) What are primary tasks of microkernel ? Name two advantages of microkernel over monolithic kernel. **4,4**

(b) Why is it not always a good idea to aim at implementing the highest degree of transparency possible ? **7**

2. Define asynchronous transfer mode. Draw and explain the architecture of ATM. **15**

Unit II

3. (a) Define physical clock. Explain Berkley's algorithm for synchronization of clocks. **2,6**

(b) With the help of suitable example explain how communication in a peer group is different from communication in a hierarchical group ? **7**

4. Define distributed deadlocks. Explain the methodologies used to handle the distributed deadlocks. **15**

Unit III

5. (a) Write three advantages and three disadvantages of two level naming scheme. **9**

(b) When file systems replicate files, they do not normally replicate all files. Give an example of a kind of a file that is not worth replicating. **6**

6. (a) Describe the causal consistency model for DSM. **8**

(b) Write and briefly explain NUMA architecture. **7**

Unit IV

7. (a) What are different types of processor faults encountered in distributed systems ? How they are handled ? **5,5**

(b) Dependable systems are often required to provide a high degree of security. Why ? **5**

8. Write and explain any *two* cryptographic algorithms for ensuring security in distributed systems ? Compare the two algorithms. **15**