

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- April 2018

B.Tech CSE VIII//M.Tech CSE II Semester

COURSE CODE: 10M11CI212

MAX. MARKS: 25

COURSE NAME: Advanced Operating Systems

COURSE CREDITS: 3

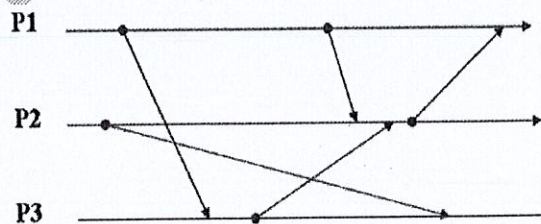
MAX. TIME: 1.5 Hrs

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

- Q1. Differentiate between the working of token based and non-token based algorithms for providing mutual exclusion in distributed systems. Explain any token based algorithm with the help of an example? [3,3]
- Q2. "Consistency, Availability and performance tend to be contradictory forces in a distributed file system". Justify. [4]
- Q3. Consider a situation where a multithreaded program (using many to many threading model) is designed for a multiprocessor system. Argue on the performance of the following scenarios. [5]
- The number of kernel threads allocated to the program is equal to the number of processors.
 - The number of kernel threads allocated to the program is less than the number of processors.

Assume that the number of user-level threads in the program is more than the number of processors in the system.

- Q4. With reference to the following diagram (with P1, P2 and P3 as three processes executing in a distributed system), Illustrate (i) a consistent cut, (ii) strongly consistent cut, and (iii) an inconsistent cut. Justify your answer. [4]



- Q5. Discuss the following in context of distributed systems: [2*3= 6]
- Performance metrics to analyze a mutual exclusion algorithm.
 - Goals of a distributed file system.
 - Any two issues in designing and implementing distributed file systems.