Jaypee University of Information Technology
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for Amit ker

T-2 Examination, April, 2019

Subject: Advanced Operating Systems
Code: 10M11CI212

Hours: 1:30
Max. Marks: 25

All Questions are compulsory and carrying equal marks.

Q. 1 i) How process synchronization is achieved in Distributed OS for dining philosophers problem.

ii) Note down the sequence of events during RPC.

iii) Note down the difference between logical clock and physical clock.

Q. 2 Draw a space-time diagram of the following event with the help of Lamport's clock.

P_1: e_1, e_2, e_3, e_4, e_5, e_6, e_7;

P_2: e_1, e_2, e_3, e_4, e_5; and the following happened before relation are captured:

$e_{12} \rightarrow e_{23}$; $e_{22} \rightarrow e_{15}$; $e_{16} \rightarrow e_{25}$; and $e_{24} \rightarrow e_{17}$

Also write the limitation of this approach.

Q. 3 i) What is the casual ordering of messages and write the Birman-Schiper-Stephenson protocol.

ii) How the performance of Mutual exclusion algorithms is measured.

Q. 4 Write the Ricart-Agrawala algorithm with its complexity and show the CS status of the following requests with the graphical representation:

P_1: <21, 1>; P_2: <32, 2>; P_3: <18, 3>.

Q. 5 How the deadlock detection algorithms works in distributed system discuss any algorithms with an example.