

## JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-3 EXAMINATION- JUNE -2016

B.TechVIII/ M.Tech II Semester

COURSE CODE: 10M11CI212

MAX. MARKS: 35

COURSE NAME: Advanced Operating System

COURSE CREDITS: 03

MAX. TIME: 2 HRS

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

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Q1)a) Consider a simple server that carries out clients requests without accessing other servers, Explain why it is generally not possible to set a limit on the time taken by such a server to respond to a client request? What would need be done to make the server able to execute requests within a bounded time? 2 Marks

b) What is a Single-point-of-failure and how can distribution help here? 1 Mark

c) Describe an application in which lack of synchronization among physical clocks can lead to a security breach. 2 Marks

Q2) Replication can occur in many forms on the world-wide web.

(a) What two forms of permanent replication occur at the level of web sites? How are they implemented and what kind of consistency do they provide? Under what circumstances is one type more appropriate than the other? 3 Marks

(b) Client-initiated caching can also occur in the web. Describe the places at which this form of caching may occur, and its effects on performance and consistency. How is it implemented? 2 Marks

Q3) Explain various client centric models? 5 Marks

Q4) For each of the following applications, do you think at-least-once semantics or at-most – once semantics is best? Discuss 5 marks

- (a) Reading and writing files from a file server
- (b) Compiling a program
- (c) Remote Banking

Q5) Which distributed mutual exclusion protocols are fault tolerant, and to what kinds of faults are they tolerant? Explain. 5 marks

Q6) What are the various RPC failures and their solutions 5 marks

Q7)a) Describe Precisely what is a scalable system 1 Mark

b) Why is it not advisable to opt for highest degree of transparency ? 2 Marks

c) Can we implement persistent asynchronous communication by means of RPCs? 2 Marks

UNIT 13 EXAMINATIONS JUNE 2016