



**MANIPAL INSTITUTE OF TECHNOLOGY**  
**MANIPAL**

A Constituent Institution of Manipal University

Reg. No.

**VII SEMESTER B.TECH. (COMPUTER SCIENCE & ENGINEERING)**

**END SEMESTER EXAMINATIONS, NOV/DEC 2017**

**SUBJECT: DISTRIBUTED AND CLOUD COMPUTING [CSE 4102]**

**REVISED CREDIT SYSTEM**  
**(21/11/2017)**

Time: 3 Hours

MAX. MARKS: 50

**Instructions to Candidates:**

- ❖ Answer **ALL** questions.
- ❖ Missing data may be suitable assumed.

- 1A.** Explain in detail the design requirements for distributed system architecture. **4M**
- 1B.** What is remote object references? How is it represented? What is the role of remote object reference in remote method invocation? **4M**
- 1C.** Explain the different operations of the request reply protocol in client server communication? **2M**
- 2A.** What is election algorithm? How coordinator is elected in the bully algorithm? Explain with a neat sketch. **4M**
- 2B.** What is Remote Method Invocation? Explain in detail the different choices of invocation semantics in Remote Method Invocation. **4M**
- 2C.** A client makes remote procedure call to a server. The client takes 5 millisecond to compute the arguments for each request and the server takes 10 milliseconds to process each request. The local OS processing time for each send or receive operation is 0.5 milliseconds and network time to transmit each request or reply message is 3 milliseconds. Marshalling or unmarshalling takes 0.5 milliseconds per message. Calculate the time taken by the client to generate and return from two request for single thread and for two threads that makes request concurrently on a single processor. **2M**

- 3A.** What is server initiated replicas? How specific files on a server can be migrated and replicated dynamically to the server placed in proximity of clients? Explain with a necessary diagram. **4M**
- 3B.** What are the different primary deployment models of cloud? Discuss in detail with suitable examples. **4M**
- 3C.** With a diagram explain the sequential consistency of data-centric consistency model. **2M**
- 4A.** What is virtual machine provisioning? Explain the common steps involved in virtual machine provisioning process. **4M**
- 4B.** Explain in detail the working of File Service Architecture and the role of each module in that with a neat diagram. **4M**
- 4C.** Explain the role of name node in Hadoop Distributed File system architecture? **2M**
- 5A.** List out the main features of Map-Reduce for data intensive application and explain the execution overview of its architecture with a neat diagram. **4M**
- 5B.** Explain in detail the different phases of SLA life cycle. **4M**
- 5C.** Explain the concept of virtual machine cloning and virtual machine snapshot. **2M**

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