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MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

VII SEMESTER B.TECH (COMPUTER SCIENCE AND ENGINEERING) DEGREE MAKEUP EXAMINATIONS, DEC-2018

SUBJECT: DISTRIBUTED AND CLOUD COMPUTING [CSE 4102]

REVISED CREDIT SYSTEM

DATE: 27-12-2018

TIME:03 HOURS MAX.MARKS : 50

Instructions to Candidates:

- Answer ALL FIVE FULL questions.
- Missing data, if any, may be suitably assumed.

1A. Explain the different types of failures that may occur in the processes and communication channel with necessary diagram. 5M

1B. What is scalability in distributed systems? Explain the different challenges encountered in the design of scalable distributed system. 3M

1C. Assume a service is implemented in multiple servers. Explain why resources might be transferred between them. Is it good for clients to multicast all requests to the group of servers? 2M

2A. Explain in detail about request reply protocol, message identifiers, discarding duplicate request messages in client server communication with necessary diagram. 5M

2B. What is Remote procedure call? Explain its implementation with a neat diagram. 3M

2C. Discuss the different roles of observers in the architecture of distributed event notification. 2M

3A. Explain any two permission-based mutual exclusion algorithms with necessary diagrams. 4M

3B. With neat diagrams explain following Primary-Based Consistency protocols. 4M

(i) Remote -write protocol

(ii) Local -write protocol.

3C. Explain Berkeley clock synchronization algorithm with a suitable example. 2M

4A.	Explain any FIVE features of Cloud Infrastructure Management	5M
4B.	With the help of a diagram explain Type-1 hypervisors.	3M
4C.	Describe how Automatic Scaling and Load balancing is a key feature in Infrastructure as a Service	2M
5A.	Explain briefly the role of NameNode, DataNode and HDFS client in Hadoop Distributed File System architecture with a neat diagram.	5M
5B.	What are the sequence of actions occurs when user program calls MapReduce function?Explain with suitable figure.	3M
5C.	What are the main features of MapReduce for data intensive applications?	2M