Paper Code: ECS-701	**Roll No.**									

B.Tech.
(SEM VIII) EVEN SEMESTER EXAMINATION 2015-16
DISTRIBUTED SYSTEMS

[Time: 3 hrs.] **[Max. Marks: 100]**

Note- Attempt All Questions. All Questions carry equal marks.

Q-1 Attempt any two parts of the following:- **(10x2=20)**

(a) Discuss the relative advantages and disadvantages of the various commonly used models for configuring distributed computing system.
(b) What is a Single-point-of-failure and how can distribution help here?
(c) What is a distributed system? How a distributed system projects a single system Image? Why network system protocols are unsuitable for distributed systems?

Q-2 Attempt any two parts of the following:- **(10x2=20)**

(a) What is ordered message delivery? Compare the various ordering semantics for message-passing. Explain how each of these semantics is implemented. ?
(b) Enumerate the various issues in clock synchronization. Classify the clock synchronization algorithms and explain Berkeley algorithm with an example.
(c) Why mutual exclusion is more complex in distributed systems? Categorize and compare mutual exclusion algorithms.

Q-3 Attempt any two parts of the following:- **(10x2=20)**

(a) What do you understand by Byzantine agreement problem?
(b) What are limitations of centralized deadlock detection? How it is overcome in distributed deadlock detection?
(c) Write and explain the algorithm of constructing a DFS spanning tree with a specified root.

Q-4 Attempt any two parts of the following:- **(10x2=20)**

(a) Explain Java RMI. What are the components and processes of Java RMI execution?
(b) Discuss various design and implementation issues of DFS.
(c) What is process migration? What are the main steps involved in process migration?

Q-5 Attempt any two parts of the following:- **(10x2=20)**

(a) What are threads? What are the different ways of synchronizing threads? Also explain various thread models.
(b) What is Load Balancing? Explain any one algorithm of load balancing.
(c) What is RPC? Explain RPC implementation and communication protocols.