

Code No: **R41128****R10****Set No. 1****IV B.Tech I Semester Supplementary Examinations, February/March - 2018****DISTRIBUTED SYSTEMS****(Information Technology)****Time: 3 hours****Max. Marks: 75****Answer any FIVE Questions**
All Questions carry equal marks

- 1 a) Discuss the following challenges in the construction of distributed systems.
 - i) Transparency and kinds of transparency
 - ii) Failure handling-Detection and Recovery [8]
- b) What is the role of distributed systems in Internet? Explain its significant consequences [7]
- 2 a) Discuss the role of communication channels, computer clocks and timing events and their ordering in interaction model of distributed system architecture. [8]
- b) What are the functioning layers of software architecture model of distributed system? Explain limitations of each layer. [7]
- 3 a) What is marshalling? Explain three different approaches for external data representation and marshalling. [8]
- b) To send receive and messages how UDP data grams are used? Give the packet format in UDP communication. [7]
- 4 a) What are the characteristics of distributed event based system?. Explain the architecture of distributed event notification. [8]
- b) Write about the case studies: RPC in open network computing and remote interfaces in java. [7]
- 5 Explain the following with respect to threads.
 - i) Architecture for multi threaded servers
 - ii) Threads versus multiple processes
 - iii) Threads implementation
 - iv) Thread synchronization and scheduling [15]
- 6 a) Write about the requirements and potential pitfalls in the design of distributed file system. [8]
- b) Explain how nodes and objects are located using routing overlay distributed algorithm. [7]
- 7 a) Explain the implementation of distributed mutual exclusion using centre server algorithm and ring based algorithm. [8]
- b) What do you mean by Total, FIFO and causal ordering of multicast messages and how to implement causal ordering using vector time stamps? [7]
- 8 a) "The use of locks can lead to deadlock" justify the statement and also discuss deadlock prevention and detection mechanisms. [8]
- b) Write about primary-back up model of replication and its operations for fault tolerance in distributed systems. [7]