

B.TECH SEM – VII (2007 COURSE) (COMPUTER ENGG.) :
WINTER - 2017

SUBJECT: DISTRIBUTED SYSTEMS

Day: **Friday**
Date: **12/01/2018**

W-2017-2563

Time: **02.30 PM TO 05.30 PM**
Max Marks: 80

N.B:

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Out of the remaining attempt **ANY TWO** questions form each section.
- 2) Answers to both the sections should be written in **SEPARATE** answer book.
- 3) Draw neat diagrams **WHEREVER** necessary.
- 4) Use of non programmable calculator is allowed.
- 5) Assume suitable data if necessary.

SECTION-I

- Q.1**
- a) What are design issues of distributed operating system? **(05)**
 - b) Explain stub generation in distributed system. **(05)**
 - c) Describe mutual exclusion in distributed computing environment to manage the activity of concurrently running process. **(04)**
- Q.2**
- a) With neat sketch explain the architectural models of distributed system. **(07)**
 - b) What are issues in interprocess communication by message passing synchronization? **(06)**
- Q.3**
- a) Explain the RPC exchange protocols used for implementing various types of RPC. **(07)**
 - b) What is marshaling? List out the different approaches of external data representation and discuss each approach in detail. **(06)**
- Q.4**
- a) Explain following coordinator selection algorithm with examples **(07)**
 - i) Bully algorithm
 - ii) Ring algorithm
 - b) State deadlock problem in distributed computing environment. How occurrences of deadlocks affect distributed transactions? **(06)**

SECTION-II

- Q.5**
- a) Discuss operation of a typical domain name server (DNS) with suitable example. **(05)**
 - b) What are different features of good distributed file system (DFS)? **(05)**
 - c) What are different fault tolerant services in distributed system? **(04)**
- Q.6**
- a) Discuss the role of naming services in distributed systems. List two navigation schemes that can be used for name resolution in domain name systems. **(07)**
 - b) Discuss the importance of clock synchronization in distributed system. Describe Lamport's logical clack synchronization algorithm. **(06)**
- Q.7**
- a) Discuss asymmetric cryptography technique and how it can be used in supporting security in distributed systems? **(07)**
 - b) What are different file accessing models in distributed file system? **(06)**
- Q.8**
- a) Draw and explain structure of shared memory space. **(07)**
 - b) List and explain fault tolerant services in distributed system. **(06)**