

GANPAT UNIVERSITY

B. Tech. Semester VI - CE/IT

Regular Examination May – June 2013

2CE605/2IT605: DISTRIBUTED SYSTEMS

Time: 3 Hours

Total Marks: 70

Instructions:

1. Figures to the right indicate full marks
2. Each section should be written in a separate answer book
3. Be precise and to the point in your answer

Section – I

- Q-1** (A) Why should we design and develop Distributed Systems? List the advantages of Distributed Systems. 6
- (B) Explain following: 6
1. Give a definition of middleware and show its position through diagram.
 2. What is a Single-point-of-failure and how can Distributed Systems help here?
- OR**
- Q-1** (A) What is Transparency? Explain Different transparencies in Distributed Systems. 6
- (B) Write the differences between Distributed operating system, Central operating system and Network operating system. 6
- Q-2** (A) Give the answers of following questions. 6
1. What are the differences between a local call and a remote call?
 2. What are stub and skeleton and why are they needed in remote method invocation?
 3. Explain "call by reference" vs. "call by value"
- (B) Describe the Steps for Developing an RMI Application. 5
- OR**
- Q-2** (A) Explain following terms with respect of client-server interaction. 6
1. Peer-to-peer communication
 2. Horizontal distribution
 3. Vertical distribution
- (B) Describe models for Code Migration. 5
- Q-3** (A) Discuss basic elements and life cycle of Aglet. 6
- (B) Define the term Agent. Compare Software Agent and Mobile Agent with RPC. 6

Section – II

- Q-4 (A) Explain CODA client architecture and define various states of Venus in CODA file system 6
(B) Explain Berkeley and Averaging algorithms. 6

OR

- Q-4 (A) Define Clock Synchronization principles and explain Cristian's algorithm. 6
(B) Define Network File System (NFS) and explain the basic NFS architecture for UNIX system. 6

- Q-5 (A) Describe the Web Services Architecture. 6
(B) Explain the basic Architecture of Google file system. 5

OR

- Q-5 (A) Write Difference between following. 6
1. Stateless vs Stateful
2. Bully algorithm vs Ring algorithm
(B) Define Map-Reduce. Discuss Hadoop Distributed File System architecture in detail. 5

- Q-6 (A) Define the term DFS. Discuss various states of Venus in Coda file system. 6
(B) Define the following terms. 6
1. Clock skew
2. UTC
3. Logical clock
4. Solar time
5. NTP
6. Drift rate

END OF PAPER