

Total No. of Questions : 10]

SEAT No. :

[Total No. of Pages : 2

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[5871]-737

B.E. (Information Technology)
DISTRIBUTED COMPUTING SYSTEM
(2015 Pattern) (Semester - II)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data if necessary.

Q1) a) Explain in brief key techniques used for indirect communication in Distributed system. [5]

b) What are various forms of transparency in distributed system? Illustrate network transparency with an example. [5]

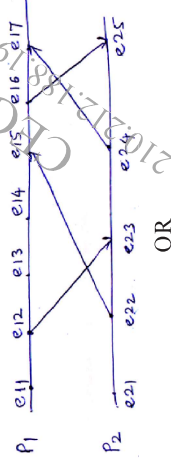
OR

Q2) a) What is group communication? Discuss IP multicast w.r.t. following : [5]

- i) Multicast Routers
 - ii) Multicast address allocation
- b) Describe how connectionless communication between a client and a server proceeds when using sockets. [5]

Q3) a) Explain the central server algorithm and evaluate the performance of this algorithm for mutual exclusion. [6]

b) Compute Lamport's clock's logical event ordering for the following scenario: [4]



OR

P.T.O.

Q4) a) Distinguish between caching and replication. [4]

b) Using finite state diagrams for the coordinator and the participant, describe the two-phase commit protocol. [6]

Q5) a) List the different distributed file system requirements. Explain the abstract file service architectural model with neat diagram. [8]

b) Explain the principal design feature of Bittorrent file sharing application, and explain in detail how Bittorrent protocol operates. [8]

OR

Q6) a) What is meant by Directory Services? What are Directory service operations? [8]

b) Discuss Domain Name System with its components like DNS queries, DNS name server. [8]

Q7) a) Describe diagrammatically the general organization of the Apache Web server. [8]

b) What are web server clusters? Explain the content - aware cluster of web Servers with a neat diagram. [8]

OR

Q8) a) Give the disadvantage of using Hierarchical caches for a web proxy. How can it be overcome through cooperative caching? [8]

b) Why web services are used? Explain SOAP and REST based web services. [8]

Q9) a) List out the various security threats in a distributed system. Elaborate on the various policies and security mechanisms in distributed systems. [9]

b) Describe KERBEROS authentication system architecture with neat diagram. Explain why KERBEROS is not complete security solution. [9]

OR

Q10) a) Explain the concept of Grid. Explain in brief, the requirements of Grid applications. Distinguish between Grid and Cloud computing. [9]

b) What is meant by Public key cryptography? Explain Digital signatures with public keys. [9]
