

(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 110780

Roll No. 

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**B.TECH.**

**Theory Examination (Semester-VIII) 2015-16**

**DISTRIBUTED SYSTEM**

*Time : 3 Hours*

*Max. Marks : 100*

**Section-A**

1. Attempt all parts. All parts carry equal marks. Write answer of each part in short. (2×10 = 20)

- (a) Define distributed systems with its examples.
- (b) What is meant by distributed file system?
- (c) Discuss heterogeneity and its characteristics.
- (d) Which type of network can be used by distributed system?

(1)

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- (e) Explain global states and distributed debugging.
- (f) What is meant by distributed garbage collection?
- (g) Why are distributed computing systems gaining popularity?
- (h) What are the different types of distributed file system available?
- (i) Write the difficulties occur to make distributed system.
- (j) Differentiate between marshalling and un-marshalling.

### Section-B

2. Attempt any five questions from this section.

(10×5 = 50)

- (a) Write in detail about the characteristics of inter process communication.
- (b) Explain how mutual exclusion is implemented in distributed systems.

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- (c) Explain the two phases in the two-phase commit protocol with the help of a diagram.
- (d) Can a server invoked by light weight procedure calls control the degree of concurrency within it? Explain.
- (e) (i) What are the election algorithms? Explain about Bully algorithm.  
(ii) Explain about distributed debugging.
- (f) What are the key design issues of remote procedure call system?
- (g) Explain asynchronous replication for updating distributed data.
- (h) Write short notes on:
  - (i) Design and implementation issues of distributed shared memory.
  - (ii) Distributed deadlocks.

### Section-C

Attempt any two questions out of the following :

(15×2 = 30)

3. Discuss how the efficiency of distributed shared memory system depends on the size of granularity and protocol used for page replacement.
4. How check pointing is used in fault tolerance in Distributed Systems? Explain independent check pointing and coordinated check pointing.
5. Explain following points related to recovery for providing fault tolerance capacities:
  - (i) Backward recovery
  - (ii) Forward recovery
  - (iii) Sender based logging
  - (iv) Receive based logging.

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