Printed Pages : 3

ECS701

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

PAPER ID : 110701

Roll No. | | | | | | | | | | |

B. Tech.

(SEM. VIII) THEORY EXAMINATION, 2014-15

DISTRIBUTED SYSTEM

Time : **3** Hours] [Total Marks : **100**

Note : Attempt All Questions. All Question carry equal marks.

1. Attempt any four of the following: [5x4l

   a) What are the inherent limitation of distributed shared system and shared memory?

   b) How resource sharing is done in distributed system?

   c) What is a distributed system? Explain with an example.

   d) What do you mean by causal ordering of messages?

   e) How does Vector clock overcome the disadvantages of Lamport clock? Explain with an example.

   f) What do you mean by global state? Differentiate between consistent and strongly consistent global state?

2. Attempt any four of the following: [5×4]

a) Differentiate between token and non-token based algorithms?

b) What are deadlock handling strategies in distributed systems? What is control organization for distributed deadlock detection? Discuss an algorithm which can remove phantom deadlocks?

c) Explain the classification of distributed mutual exclusion.

d) What are the performance metrics for distributed mutual algorithms? Explain with example.

e) Explain any one Token and non-token based algortihm.

f) Explain Remote object reference and remote interface.

3. Attempt any two of the following: [10×2]

a) Write short notes on the following

(i) Fault tolerant services

(ii) Highly available services

b) Compare and contrast between different concurrency control techniques for transaction.

c) What do you mean by two phase locking? How is it different from strict two phase locking? Explain.

4. Attempt any four of the following : [10×2]

a) What do you mean by agreement protocols? List all the agreement protocols and the differences between them.

b) Explain Lamport Shostak Pease algorithm. Solve it for when no of processors are 5 and no of faulty processors is one.

c) Answer the following :

i) Show that byzantine agreement cannot be reached among four processors when two are faulty.

ii) Explain the difference between Ho-Ramamoorthy two phase and one phase algorithrn. Explain with example.

5. Attempt any two of the following : [10×2]

a) Explain two phase commit protocol. Is it centralized or decentralized protocol? Design a de-centralized two-phase commit protocol where no site is a co-ordinator.

b) How check point is useful in the recovery procedure in distributed systems? Explain with an example. Also explain the domino effect.

c) Which protocol do you suggest when there is a network partition? Explain its variants as well.
