

Total No. of Questions :10]

SEAT No. :

P4006

[5561]-713

[Total No. of Pages :2

B.E. (IT)

**DISTRIBUTED COMPUTING SYSTEM**  
**(2015 Course) (414462) (Semester-II)**

Time : 2½ Hours]

[Max. Marks : 70

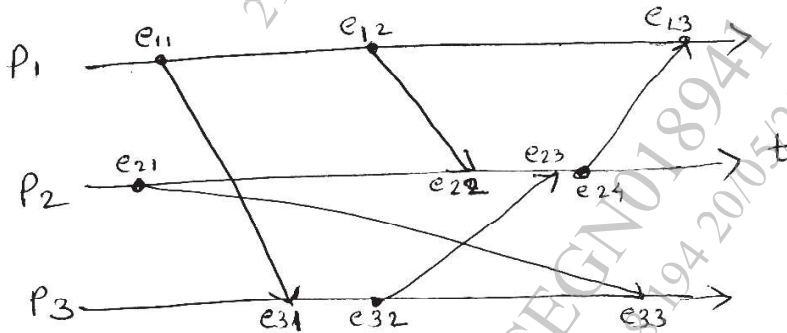
Instructions to the candidates:

- 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) Figures to the right indicate full marks.
- 3) Neat diagrams must be drawn wherever necessary.
- 4) Assume suitable data, if necessary.

- Q1)** a) Is it a good to aim at implementing the highest degree of transparency always? Justify your answer. [6]
- b) Rephrase the meaning of heterogeneity in distributed system and also show how it is overcome. [4]

OR

- Q2)** a) Discuss various RPC semantics in case of system failures. [6]
- b) Outline the goals of distributed systems. [4]
- Q3)** a) Consider the following event diagram for processes P1, P2 and P3 executing in a distributed system. Compute the vector clock that is carried on each message. [6]



- b) Discuss with real scenario IBM's web sphere message- queuing system. [4]

OR

P.T.O.

- Q4)** a) Explain in details with an example Ricart and Agrawala algorithm for distributed mutual exclusion. [6]  
b) State and explain any one primary based consistency protocol. [4]

- Q5)** a) List and explain the design goals of the Sun NFS. [8]  
b) Illustrate the concept of naming services and DNS in distributed systems. [8]

OR

- Q6)** a) Illustrate with an example how the BitTorrent is designed to provide support for downloading video files. [8]  
b) Describe how the resources are managed to achieve QOS for an application in a distributed multimedia system. [8]
- Q7)** a) Draw and explain in detail architecture of web service and principle behind introducing the concept of web service. [8]  
b) Discuss the structure of request and response messages of HTTP for communication between a client and server. [8]

OR

- Q8)** a) Draw and explain the general organization of an Apache web server. [8]  
b) Give the disadvantage of using hierarchical caches for a web proxy. How can it be overcome through cooperative caching? [8]
- Q9)** a) How are digital signatures used for message authentication? Point out the generation and verification process of a digital signature using public key cryptography. [9]  
b) Explain the secure mobile code in brief with reference to Java sandbox. [9]

OR

- Q10)** a) Discuss various security mechanisms in distributed systems? [9]  
b) Describe the authentication process to log into a distributed system which uses Kerberos to setup a secure channel. [9]

