Total No. of Questions :10]

SEAT No. : ____

P4006

[Total No. of Pages :2

[5561]-713
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]**

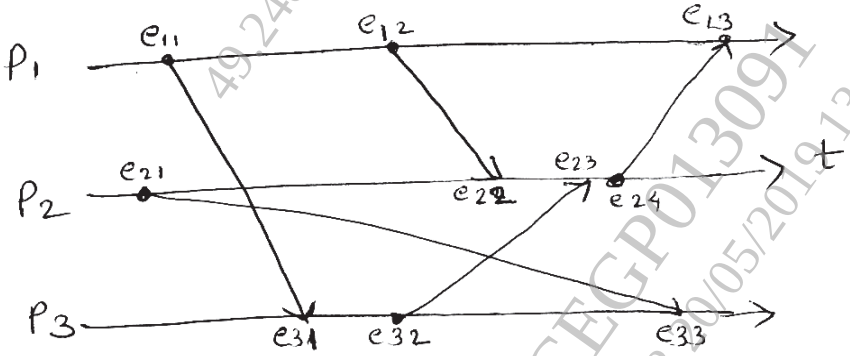
b) Rephrase the meaning of heterogeneity in distributed system and also show how it is overcome. **[4]**

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]**

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