[5670]-734

B.E. (IT)

DISTRIBUTED COMPUTING SYSTEM

(2015 Course) (414462) (Semester-II) (End Sem.)

Time : 2½Hours]   *[Max. Marks : 70*

Instructions to the candidates:

1) *Answer Q.1 or Q.2 and Q.3 or Q.4 and Q.5 or Q.6 and Q.7 or Q.8 and 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) Outline the goals of distributed systems. **[4]**

    b) Explain with example different system architectures of distributed system. **[6]**

OR

Q2) a) Point out various scalability issues and the techniques to resolve them while designing distributed system. **[6]**

    b) Explain Bully algorithm for coordinator election. **[4]**

Q3) a) Explain centralized mutual exclusion algorithm. List the shortcomings of this algorithm. **[6]**

    b) Discuss the solution proposed by vasudevan et al. that can handle failing nodes and partitioning networks while electing a coordinator in wireless environments. **[4]**

OR

Q4) a) Classify the different types of failures based on their severity. Explain the behaviour of the server in each case. **[6]**

    b) Explain how reliable group communication can be achieved in distributed systems. **[4]**

Q5) a) Illustrate with an example the working of Bit Torrent protocol. **[8]**

    b) List and explain the design goals of the sun NFS. **[8]**

OR

P.T.O.

Q6) a) Explain the design of distributed file system architecture w.r.t HDFS.**[8]**

b) Explain the following terms w.r.t naming entities. **[8]**

   i)   Names   ii)   Identifiers

   iii) Name spaces   iv) Addresses

Q7) a) Draw and explain the principle of providing and using a web service.**[8]**

b) Give the drawback of using hierarchical caches for a web proxy. Discuss the solution to overcome the drawback. **[8]**

<div align="center">OR</div>

Q8) a) Discuss the general organization of Apache web server. Explain the concept of a hook. **[8]**

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

Q9) a) Explain key management for secret and public key distribution with suitable block diagram. **[9]**

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

<div align="center">OR</div>

*Q10)*a) Discuss how Authorization management helps in maintaining the security in a distributed system. **[9]**

b) With suitable diagram, Explain the various configurations of firewall.**[9]**

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