B.TECH SEM – VIII (2007 COURSE) (INF. TECH.) :
WINTER - 2017
SUBJECT: DISTRIBUTED SYSTEMS

Day : **Monday** Time **02.30 PM TO 05.30 PM**
Date : **20/11/2017** **W-2017-2683** Max. Marks : 80

N.B.:

1) Q. No. 1 and Q. No. 5 are **COMPULSORY**. Out of remaining solve Any **TWO** questions from each Section.
2) Answers to both the sections should be written in **SEPARATE** answer book.
3) Figures to the right indicate **FULL** marks.
4) Draw neat sketches and assume suitable data **WHEREVER** necessary.

SECTION-I

Q.1 **a)** What is Heterogeneity is Distributed System? **(05)**

b) What are the main functions of a Distributed File System? **(04)**

c) Compare Process Vs Threads in detail. **(05)**

Q.2 **a)** List the various Distributed computing models and explain any one in detail. **(06)**

b) What is Flexibility? Why is it important for the design of a distributed system to be flexible? **(07)**

Q.3 **a)** What is Granularity in Distributed Shared Memory (DSM)? **(02)**

b) What are Consistency Models? How are they classified? Explain the Sequential Consistency. **(07)**

c) Explain :- i) Structured and Unstructured files
ii) Mutable and Immutable file **(04)**

Q.4 **a)** What are the goals of election algorithms? **(02)**

b) Explain Consensus Problem. **(03)**

c) Why Clock Synchronization is important in distributed system? Explain any one algorithm used for it. **(08)**

SECTION-II

Q.5 **a)** Explain 2-phase commit protocol for nested transaction. **(05)**

b) What are hash functions? How are they used for security in distributed system? **(05)**

c) Discuss Java RMI in brief. **(04)**

Q.6 **a)** Why Concurrency Control is important? Explain Concurrency Control using Timestamp Ordering technique. **(07)**

b) How Recovery is done using Two-phase Commit protocol? **(06)**

Q.7 **a)** Define Cryptography. What are different uses of Cryptography? **(07)**

b) Explain Hybrid Cryptographic Protocols. **(06)**

Q.8 **a)** Write short notes on following :- **(08)**
i) Features of NFS
ii) Caching and Replication in Coda File System

b) Discuss Auto Mounting in NFS. **(05)**

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