Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 31291

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Eighth Semester

Computer Science and Engineering

CS 2056 / CS 804 — DISTRIBUTED SYSTEMS

(Common to Information Technology)

(Regulation 2008)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Explain any two non functional properties of distributed systems that affect the quality of Service.

2. A process in a distributed system runs on one node and accesses data from another node. After some time, for load balancing purposes, this process relocates to a different node. What kind of transparencies should be provided for this process in a distributed system?

3. Why is the multi-threaded process model preferable compared to multiple single-threaded processes?

4. Explain the role of stub in RMI.

5. List the types of transparency that a distributed file system should support.

6. Define URN.

7. Define *happened-before* relation that holds between two events.

8. Differentiate ring-based algorithm and bully algorithm.

9. State two advantages of shared memory multiprocessors over distributed memory multiprocessors.

10. State the role of ORB core in CORBA.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain various challenges to be met in designing distributed systems. (10)

    (ii) Explain the various design requirements for distributed architecture. (6)

Or

    (b) Describe in detail about Client-server communication (16)

12. (a) Describe Java RMI. (16)

Or

    (b) Discuss communication and invocation in detail. (16)

13. (a) Explain the case study of Global Name Services in detail. (16)

Or

    (b) Explain the File Service architecture for distributed systems in detail.(16)

14. (a) Explain the distributed algorithms for mutual exclusion. What are the advantages and disadvantages of them over centralized algorithms? (16)

Or

    (b) Explain the different distributed physical clock synchronization algorithms with their relative advantages and disadvantages. (16)

15. (a) What is CORBA? Explain its architecture and various services provided by it. (16)

Or

    (b) Explain the main issues in building a DSM system on a network of heterogeneous machines. (16)

_____