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Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 60365

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Eighth Semester

Computer Science and Engineering

CS 2056/CS 804/10144 CSE 53 — DISTRIBUTED SYSTEMS

(Common to Information Technology)

(Regulations 2008/2010)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is marshalling and unmarshalling?

2. What factors affect the responsiveness of an application that access shared data managed by a server?

3. What are the issues arise while designing the RMI?

4. Differentiate between monolithic and microkernel.

5. What do you mean by name resolution?

6. State the differences between Flat file service and Directory service.

7. What are the criteria used to evaluate the performance of mutual exclusion algorithm?

8. Define Happened-before relation according to Lamport.

9. Differentiate lazy release and eager release consistency.

10. What are the main components of CORBA language independent RMI framework?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Briefly explain the challenges of distributed systems. (6)

(ii) Describe the architectural models and their variants with neat sketch. (10)

Or

(b) (i) Describe the client server communications (8)

(ii) Explain how interprocess communication is handled in UNIX (8)

12. (a) (i) Explain in detail about Remote Procedure call and also discuss how it is implemented in Sun systems. (10)

(ii) Describe the architecture and roles played by the object that participate in distributed event based system. (6)

Or

(b) Examines the design and implementation of multithreaded processing in detail. (16)

13. (a) (i) Briefly explain the file service architecture. (10)

(ii) Explain the requirements of distributed file system. (6)

Or

(b) (i) Prepare a step-by-step procedure for chat messenger using DNS to query and resolve host name address. Develop an algorithm for the query. (8)

(ii) Explain in detail about Global Name Service (8)

14. (a) (i) Describe the algorithms used for external and internal synchronization. (8)

(ii) Describe the snapshot algorithm suggested by Chandy and Lamport for determining global state of the distributed system. (8)

Or

(b) (i) What is the goal of an election algorithm? Explain in detail. (8)

(ii) Explain the Maekavas-voting algorithm for implementing mutual exclusion in distributed system. (8)

15. (a) (i) Explain the different consistency models for distributed system. (10)

(ii) Describe how to implement page fault handling using invalidation protocols. (6)

Or

(b) (i) Elaborate the architecture of CORBA with a neat sketch. (8)

(ii) Explain any two CORBA services. (8)