Reg. No. : .....

Name : .....

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H – 3412

Eighth Semester B.Tech. Degree Examination, November 2019

08.804 : DISTRIBUTED SYSTEMS (R)

(2008 Scheme)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions.

1. Explain the significant consequences of a distributed systems.

2. Compare and contrast cloud computing with more traditional client-server computing?

3. Explain the types of failure occur when a process or communication channel fails to perform its actions?

4. Explain the characteristics of interprocess communication.

5. Compare the worker pool multi-threading architecture with the thread-per-request architecture.

6. What is the need of external Data Representation in interprocess communication?

7. List and explain any four methods of attack on distributed systems.

8. Explain the four properties of transaction.

9. Explain how the two-phase commit protocol for nested transactions ensures that if the top-level transaction commits, all the right descendants are committed or aborted.

10. What is Phantom Deadlocks? Discuss.

(10 × 4 = 40 Marks)

PART – B

Answer **one full** questions from **each** Module.

Module – I

11. (a) List and Explain the main challenges faced in distributed systems.

(b) Explain the following architectural patterns of the distributed system with a neat diagram

(i) Layering architecture

(ii) Tiered architecture.

OR

12. (a) Explain the security model of a distributed system with a neat diagram.

(b) Explain any five networking issues of a disturbed system.

Module – II

13. (a) Discuss on the following failure model of request-reply protocol in client-server interaction.

(i) Discarding duplicate request messages (ii) Lost reply messages (iii) History (iv) Timeouts (v) Styles of exchange protocols.

(b) Explain the monolithic kernel and microkernel architecture. List the advantages and disadvantages.

OR

14. (a) Explain the following cryptography algorithms.

    (i) DES

    (ii) RSA

    (b) Explain the important benefits and complexities of distributed object middleware.

Module – III

15. (a) Discuss and explain the Sun Network File System and its modules in detail with a neat a diagram.

    (b) Explain the edge-chasing algorithm. Give examples to show that it could detect phantom deadlocks.

OR

16. (a) Explain the passive or primary-backup model of replication for fault tolerance with a neat diagram.

    (b) Explain the use of locks in strict two-phase locking and illustrate the implementation of locks.

(3 × 20 = 60 Marks)