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D – 4173

Reg. No. :

Name :

**Eighth Semester B.Tech. Degree Examination, January 2018
(2013 Scheme)
13.803 : DISTRIBUTED SYSTEMS (R)**

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions :

(5×4=20 Marks)

1. Explain about resource sharing in distributed systems with examples.
2. What is meant by distributed objects ? Give examples.
3. How to create a new process ? Explain.
4. What is meant by validation of transactions ? Discuss.
5. Write short notes on exclusive locks with appropriate scenarios.

PART – B

Answer **one full** question from **each** Module :

Module – I

6. a) Explain how it is possible for a sequence of packets transmitted through a wide area network to arrive at their destination in an order that differs from that in which they were sent. Why can't this happen in a local network ? Can it happen in an ATM network ? **15**
- b) Give an example of an HTTP URL. List the main components of an HTTP URL, stating how their boundaries are denoted and illustrating each one from your example. To what extent is an HTTP URL location transparent ? **5**

OR

7. a) Discuss about architectural models in detail. **15**
- b) Give examples of applications where the use of mobile code is beneficial. **5**

P.T.O.

**Module – II**

8. a) Explain the sequence of steps involved in RPC. **15**
b) Why can't binary data be represented directly in XML, for example, by representing it as Unicode byte values ? XML elements can carry strings represented as *base64*. Discuss the advantages and disadvantages of using this method to represent binary data. **5**

OR

9. a) With a case study, explain the Inter Process Communication in UNIX environment. **15**
b) Which of the following call semantics would you recommend for *Election* service ? **5**
i) At-least-once
ii) At-most-once
iii) May be. Justify your answer.

Module – III

10. a) Compare the worker pool multi-threading architecture with the thread-per-request architecture. **15**
b) Do page faults present a problem for user-level threads implementations ? **5**

OR

11. a) A 'null' RMI that takes more parameters, calls an empty procedure and returns no value delays the caller for 2.0 milliseconds. Explain what contributes to this time ? In the same RMI system each 1 K of user data adds an extra 1.5 ms ; a client wishes to fetch 32 K of data from a file server. Should it use one 32 K RMI or 32 1 K RMIs ? **15**
b) Describe some of the ways in which conventional email is vulnerable to eavesdropping, masquerading, tampering, replay, denial-of-service. Suggest methods by which email could be protected against each of these forms of attack. **5**

Module – IV

12. Discuss about File Service Architecture with suitable diagrams. **20**

OR

13. a) Describe how a non-recoverable situation could arise if write locks are released after the last operation of a transaction but before its commitment. **10**
b) 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**