R13

Code No: 126AP

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech III Year II Semester Examinations, October/November - 2016
DISTRIBUTED SYSTEMS
(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

1.a) Define synchronous and asynchronous distributed systems. [2]
b) Give some reasons why centralized systems are not adequate to modern computing. [3]
c) Explain distributed termination detection. [2]
d) Differentiate between election algorithm and mutual exclusion algorithms. [3]
e) Explain request-reply protocols. [2]
f) Explain datagram communication in UNIX. [3]
g) Explain cache consistency in Andrew file system. [2]
h) Explain name service requirements. [3]
i) Define wait-for-graph? [2]
j) Define distributed deadlock. [3]

PART - B

(50 Marks)

2.a) Differentiate between centralized systems and the distributed systems with a suitable example.
b) Illustrate with an example how resources are shared in the distributed systems and explain how it is not possible in the centralized systems? [5+5]

OR

3.a) Discuss the challenges of the distributed systems with their examples.
b) Explain resource sharing in the distributed systems. [5+5]

4.a) Explain how consistent global states are observing in distributed debugging process?
b) Explain the snapshot algorithm of Chandy and Lamport. [5+5]

OR

5.a) Differentiate all the type of the multicast communication.
b) Explain how synchronizing physical clock works. [5+5]

6.a) Explain group communication in detail.
b) Describe the inter process communication in UNIX with an example. [5+5]

OR

7.a) Explain the API for the internet protocols in IPC.
b) Explain in detail about external data and marshalling. [5+5]

8.a) Explain the design and implementation issues of distributed shared memory.
b) Explain NFS architecture of the sun network file systems. [5+5]

OR

9.a) Write about the recent advances in the distributed file systems.
b) Describe basic distributed file system and storage systems and their properties. [5+5]

10.a) Explain two phase commit protocols for nested transactions.
b) Distinguish between three phase commit and two phase commit protocol. [5+5]

OR

11.a) Explain concurrency control in distributed transactions.
b) Explain why executions are always strict, even if read locks are released after the last operation of a transaction but before its commitments. [5+5]

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