

Code No: 126AP

**R13****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year II Semester Examinations, April - 2018****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 and explain about the distributed systems.
- b) What is mean by resource sharing? Explain.
- c) Present a note on external synchronization.
- d) Write about election algorithm.
- e) Differentiate unicast and multicast communication.
- f) Write a short note on group communication.
- g) Discuss about distributed shared memory.
- h) What are the requirements of the distributed file systems?
- i) What is deadlock? Explain.
- j) Write about two phase locking.

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**PART - B****(50 Marks)**

- 2.a) Explain about architectural elements.
  - b) Write a short notes on characteristics of distributed systems.
- OR**
3. Explain in brief about system models of distributed systems.
  - 4.a) Discuss about distributed mutual exclusion.
  - b) Discuss about consensus and related problems.

[5+5]

[10]

[5+5]

**OR**

- 5.a) Explain about clocks, events and process states.
- b) Discuss about global states.

[5+5]

- 6.a) Discuss about the API for the Internet protocols.
- b) Explain about IPC in UNIX.

[5+5]

**OR**

- 7.a) Discuss about communication between distributed objects.
- b) What is a Remote Procedure Call(RPC)? Explain.

[5+5]

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- 8.a) Explain about Andrew file system.  
b) Explain about design and implementation issues of distributed shared memory. [5+5]

OR

9. Explain the following  
a) Directory services.  
b) Release consistency in distributed shared memory. [5+5]

- 10.a) What is mean by atomic commit protocols? Explain.  
b) Discuss about timestamp ordering. [5+5]

OR

11.a) Discuss about concurrency control in distributed transactions.  
b) Explain about flat and nested distributed transactions. [5+5]

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