Code No: 126AP **R13**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech III Year II Semester Examinations, May - 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)	List the services provided by multiple servers, proxy servers and peer processes.	[2]
b)	Define types of failures. What is meant by byzantine failure?	[3]
c)	Define bully algorithm.	[2]
d)	Define the definition of the critical section.	[3]
e)	List the differences between TCP and UDP.	[2]
f)	State client-server communication.	[3]
g)	Explain name resolution.	[2]
h)	Explain other aspects in the Andrew file system.	[3]
i)	Explain recovery of nested transactions.	[2]
j)	Define distributed deadlock?	[3]

PART - B

(50 Marks)

2.a) Describe the advantages and disadvantages of the HTML, URL and HTTP as core technologies for information browsing.
b) Discuss how distributed systems are more scalable than the centralized systems. [5+5]

OR

3.a) Demonstrate the design requirements for distributed architectures.
b) Explain how events are ordering in real-time with neat sketch. [5+5]

4.a) Explain different kinds of problems that are associated with the coordination and agreement in distributed systems.
b) Explain how election is done when any particular system crashes? [5+5]

OR

5.a) Differentiate failure assumptions and failure detectors.
b) Illustrate an example execution of the ring- based algorithm to show that processes are not necessarily granted entry to the critical section in happened-before order. [5+5]

6.a) Explain RPC with a neat example.
b) Discuss about the communication between distributed objects in RMI. [5+5]

OR

7.a) Explain the implementation of the RMI and distributed garbage collection.
b) Define the interface to the election service in the CORBA IDL, and JAVA RMI. Note that CORBA IDL provides type long for 32-bit integers. Compare the methods in the two languages for specifying input and output arguments. [5+5]

8.a) Explain sequential consistency and IVY in detail.
b) Discuss in detail about Munin. [5+5]

OR

9.a) Explain directory and discovery services.
b) Explain release consistency with an example. [5+5]

10.a) Define deadlock? And explain how deadlocks are occurred and recovered in the distributed systems?
b) Explain with an example how two transactions are interleaved which are serially equivalent at each server but is not serially equivalent globally? [5+5]

OR

11.a) Distinguish all the locking protocols in distributed transactions.
b) Discuss the edge-chasing algorithm. Give examples to show that it could detect phantom deadlocks. [5+5]

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