BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: M.TECH **SEMESTER : I**
BRANCH: CSE **SESSION : MO/18**

SUBJECT: CS504 DISTRIBUTED SYSTEM

TIME: 3 HOURS **FULL MARKS: 50**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Before attempting the question paper, be sure that you have got the correct question paper.**
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

Q.1(a) Comment on the challenges imposed on a distributed system with respect to heterogeneity, openness and security. [5]

Q.1(b) Summarize the functions of the top five layers of the OSI model with an example of the technology used at each layer. [5]

Q.2(a) What type errors can take place in UDP communication? Explain how they are handled in TCP? [5]

Q.2(b) Write the functions performed by the 3 communication primitives used in the request-reply protocol? Give two examples of HTTP request messages? [5]

Q.3(a) Describe the file sharing mechanism used in the Napster application? [5]

Q.3(b) Draw the architecture of the Sun NFS. Explain how it provides access transparency? [5]

Q.4(a) Define the happened-before relation between events in distributed systems. What is Lamport logical clock and how it can be used to capture this relation? [5]

Q.4(b) Describe the Ricart and Agrawala's algorithm for implementing distributed mutual exclusion. [5]

Q.5(a) Describe the voting phase and the commit phase of the two phase commit protocol for flat transactions in distributed systems? [5]

Q.5(b) Illustrate the edge chasing algorithm for distributed deadlock detection. [5]

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