

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

CLASS: MTECH  
BRANCH: CSE

SEMESTER : I  
SESSION : MO/2025

SUBJECT: CS536 CLOUD COMPUTING

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.
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| Q.1(a) Define Cloud Computing from a user's point of view. How does cloud computing can help to reduce operational and other costs of enterprises?     | [5] |    |
| Q.1(b) List any five essential characteristics of cloud computing.   | [5] |    |
| Q.2(a) Describe how processors communicate and share memory in a UMA and NUMA system.  | [5] |    |
| Q.2(b) What is Flynn's Classification? Which category represents traditional single-core processors? What is the key difference between SIMD and MIMD? | [5] |    |
| Q.3(a) What is virtualization? Describe the key layers of the Virtualization Reference Model.  | [5] |    |
| Q.3(b) What is a hypervisor? With the help of a diagram explain Type I and Type II hypervisors.  | [5] |    |
| Q.4(a) Discuss in detail the service delivery models of cloud computing: IaaS, PaaS, and SaaS.   | [5] |    |
| Q.4(b) Describe the different types of cloud deployment models: public, private and hybrid.  | [5] |    |
| Q.5(a) Explain the overall architecture of the Aneka framework with the help of a labeled diagram.   | [5] |    |
| Q.5(b) What is meant by a <i>thread</i> in the context of Aneka? Compare the life cycle of local threads and Aneka threads.                            | [5] |    |

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