Code:- 0103 XII CLC0320 (Time: 2½ hours)

[Total Marks: 60]

N. B.: (1) **All** questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
(3) Answers to the **same question** must be **written together**.
(4) Numbers to the **right** indicate **marks**.
(5) Draw **neat labeled diagrams** wherever **necessary**.
(6) Use of **Non-programmable** calculator is **allowed**.

1. **Attempt _any two_ of the following:**   12
   a. What are cloud computing characteristics?
   b. Differentiate between different types of virtualization?
   c. Discuss SaaS maturity models?
   d. Explain different cloud service deployment models?

2. **Attempt _any two_ of the following:**   12
   a. Explain Architecture of Google File System?
   b. Explain cloud data Security challenges?
   c. Discuss the use of Hypervisor in Cloud Computing and hypervidsor clustering architecture
   d. Describe Cloud Computing Services

3. **Attempt _any two_ of the following:**   12
   a. Short note on Cloud Service Brokerage
   b. Describe fundamental principles of cloud security design
   c. Describe virtualization, it's types and it's benefits
   d. Explain rapid provisioning architecture

4. **Attempt _any two_ of the following:**   12
   a. What are various types of cloud in the industry and it's pros and cons
   b. Explain dynamic failure detection and recovery architecture
   c. Explain cloud balancing architecture
   d. Describe different types of hardware virtualization techniques

5. **Attempt _any two_ of the following:**   12
   a. Explain SLA management for applications hosted on cloud
   b. Explain non disruptive service relocation architecture
   c. Describe cost metrics and price consideration in cloud computing
   d. Explain zero downtime cloud computing architecture