

Ref. No: CUIET/CSE/ACAD/2025/419

Date: 15/09/2025

**NOTICE**  
**Attention:- B.E. CSE Batch 2023**

**Test Type:** ST

**Test No:** 1

**Total Marks:** 60

**Duration:** 60 minutes

**Name of Course Coordinator:** Dr. Suhasini

**Course Code:** 22CS024

**Course Title:** System Design

**Day:** Tuesday

**Date:** 23/09/2025

**Time:** 9:00AM – 04:00 PM

**Mode:** Online (On-Campus)

**Semester:** B.E.-CSE 5<sup>th</sup>Sem

**Platform:** Testpad

**Groups:-** G1-G12, G14, G16, G17-27

**Specialization:** Full Stack Engineering, University Coding Academy

**Syllabus for Test:(As per CHO): Fundamentals of System Design:** Introduction to System Design, System Design Characteristics: Availability, Reliability, Scalability: Vertical Scaling (Scaling Up), Horizontal Scaling (Scaling Out), Maintainability, Consistency, Fault Tolerance, Latency, Throughput Comparison: Performance vs Scalability, Latency vs Throughput, Availability vs Consistency, Maintainability - Modular Design, Clean Code Principles, CI/CD Pipelines, **Advanced System Design Concepts:** CAP Theorem, Consistency Patterns: Weak Consistency, Eventual Consistency, Strong Consistency, Functional and Non-Functional Requirements, Design Approaches: High Level Design, Low Level Design Architectural Patterns-Monolithic Architecture, Microservices, Event-Driven Architecture, **Fundamentals of Database:** What is Database, Characteristics, **Data Models, Database Schema:** Logical, Conceptual, Physical **Data Integrity and Consistency:** Primary Key, Candidate Keys, Super Key, Check Constraint, Unique Constraint, Not Null Foreign Keys, **Database Design:** What is Database Design, Steps to Ensure Good Database Design, **Database Design Lifecycle Phases:** Requirement Analysis, Logical Design, Physical Design, Object Oriented Design Principles

**Format of Assessment:**

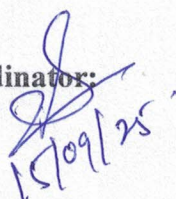
1 Mark MCQ: 30

2 Mark MCQ: 15

Total MCQ: 45

Total Marks: 60

**Signature of Course Coordinator:**

  
15/09/25