CHITKARA UNIVERSITY

Department of Computer Science & Engineering
Chitkara University Institute of Engineering & Technology
(Accredited by NAAC with Grade 'A+')

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 5thSem **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