SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)
Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai
Accredited by NAAC-UGC with 'A++' Grade (Cycle III) &
Accredited by NBA (B.E - CSE, EEE, ECE, Mech&B.Tech.IT)
COIMBATORE-641 035, TAMIL NADU

Reg. No:

B.E/B.Tech- Internal Assessment – II
Academic Year 2024-2025 (ODD Semester)
Third Semester
Electronics and Communication Engineering
23ECB201 – Digital System Design

B

Time: 1$^{1/2}$ Hours   **Maximum Marks: 50**

Answer All Questions
PART - A (5 x 2 = 10 Marks)

		CO	Blooms
1.	What is a code converter? Classify different types of code converters.	CO2	**UND**
2.	Explain odd parity checker.	CO2	**UND**
3.	Distinguish Latch and Flip-Flop	CO3	**ANA**
4.	How state assignment is performed in sequential circuit design?	CO3	**REM**
5.	Compare static and dynamic hazard.	CO3	**ANA**

PART – B (2*13=26 Marks) & (1*14=14 Marks)

				CO	Blooms
6.	(a)	What is the significance of using gray code? Develop a logic circuit to convert 4-bit binary code to grey code.	13	CO2	**APP**
		(OR)			
	(b)	Construct a 2-bit magnitude comparator logic circuit with 3 outputs: A>B, A<B, A=B.	13	CO2	**APP**
7.	(a)	If a logic circuit is prone to hazards, outline what design strategies would you employ to detect and resolve them?	13	CO3	**UND**
		(OR)			
	(b)	Illustrate the functioning of a D flip-flop with appropriate tables and diagrams.	13	CO3	**UND**
8.	(a)	Analyze the impact of input conditions on the state transitions of an SR flip-flop. How can understanding these transitions inform the design of more complex digital systems?	14	CO3	**ANA**
		(OR)			

(b) Examine the operational principles of a JK flip-flop, including its   14   CO3   **ANA**
     truth table and characteristic equation. How do the inputs J and K
     interact to produce different output states?

Bloom's Taxonomy:

REM – Remember   **UND** – Understand   **APP**– Apply   **ANA**– Analyze **EVA –** Evaluate

CRT - Create

Faculty in-charge   **Teaching Coordinator**   **HoD**   **Dean**

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