G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.

UG DEGREE END SEMESTER EXAMINATIONS - NOVEMBER 2024.

(For those admitted in June 2023 and later)

PROGRAMME AND BRANCH: B.Sc., COMPUTER SCIENCE

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
II	PART - III	ELECTIVE GENERIC-2	U23CS2A2	DIGITAL LOGIC FUNDAMENTALS

Date & Session: 14.11.2024 / FN   **Time : 3 hours**   **Maximum: 75 Marks**

Course Outcome	Bloom's K-level	Q. No.	SECTION – A (10 X 1 = 10 Marks) Answer ALL Questions.
CO1	K1	1.	The Hexadecimal number $(AF)_{16}$ is equivalent to _____. a) 1010 1111 b) 1111 1010 c) 1111 1011 d) 0101 0000
CO1	K2	2.	ASCII stands for _____. a) American Standard Code for International Information b) American Standard Code for Information Interchange c) American Scientific Code for Information Interchange d) American Standard Code for Intelligent Information
CO2	K1	3.	Simplify the Boolean expression $A+\bar{A}$. a) 0 b) 1 c) A d) $\bar{A}$
CO2	K2	4.	How many cells are there in a 3-variable K-map? a) 2 b) 6 c) 1 d) 8
CO3	K1	5.	In a demultiplexer, the signal direction is from _____. a) Multiple inputs to one output b) One input to multiple outputs c) Multiple outputs to one input d) None of the above
CO3	K2	6.	_____ is the largest decimal number that can be represented with an 8-bit unsigned binary number. a) 255 b) 0 c) 127 d) 512
CO4	K1	7.	Simplest electronic circuit used as a memory element is called _____. a) Resistor b) Capacitor c) Flip-flop d) Inductor
CO4	K2	8.	A basic RS flip-flop can be constructed by cross-coupling of which basic logic gates? a) AND or OR gates b) XOR or NAND gates c) NOR or AND gates d) NOR or NAND gates
CO5	K1	9.	A group of flip-flops connected in such a way that a binary number can be shifted into or out of the flip-flops is called a _____. a) Latch b) Register c) Flip-Flop d) Shift Register
CO5	K2	10.	Which shift register type allows data to be shifted both left and right? a) Serial Shift Register b) Parallel Shift Register c) Universal Shift Register d) Serial-in Serial-out Shift Register

Course Outcome	Bloom's K-level	Q. No.	SECTION – B (5 X 5 = 25 Marks) Answer ALL Questions choosing either (a) or (b)
CO1	K3	11a.	Explain Decimal to Binary Conversion and also Convert decimal 23.6 to a binary number.
			(OR)
CO1	K3	11b.	Explain the significance of universal gates.
CO2	K3	12a.	Simplify the following $Y= (A+ B) (A'(B' + C'))' + A'(B + C)$
			(OR)
CO2	K3	12b.	Write a note on Don't care condition with example.
CO3	K4	13a.	Discuss Seven segment decoder.
			(OR)
CO3	K4	13b.	Explain XOR with block diagram and truth table.
CO4	K4	14a.	What is Flip flops? Explain.
			(OR)
CO4	K4	14b.	Explain two types of Edge Triggered D Flip flops.
CO5	K5	15a.	What is Registers? Explain.
			(OR)
CO5	K5	15b.	Write short note on Parallel in Parallel out with block diagram.

Course Outcome	Bloom's K-level	Q. No.	SECTION – C (5 X 8 = 40 Marks) Answer ALL Questions choosing either (a) or (b)
CO1	K3	16a.	Explain the following codes : i) Gray Code ii)Excess 3 Code.
			(OR)
CO1	K3	16b.	Differentiate between the basic gates AND, OR, and NOT with truth tables.
CO2	K4	17a.	Simplify the Boolean function $F(A,B,C,D)=\sum(0,1,2,5,8,9,10)$ as Sum of Products Method and Explain.
			(OR)
CO2	K4	17b.	Explain K-Map method.
CO3	K4	18a.	Describe the working of Multiplexer with a block diagram.
			(OR)
CO3	K4	18b.	How is 2's complement representation used to perform subtraction?
CO4	K5	19a.	Briefly explain the working of RS flip flop.
			(OR)
CO4	K5	19b.	Explain JK Master Slave Flip Flops.
CO5	K5	20a.	Discuss the types of any two Registers.
			(OR)
CO5	K5	20b.	Explain the Universal Shift Register.