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G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.**UG DEGREE END SEMESTER EXAMINATIONS - APRIL 2025.**

(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/U24CS2A2	DIGITAL LOGIC FUNDAMENTALS

Date & Session: 03.05.2025/FN**Time: 3 hours****Maximum: 75 Marks**

Course Outcome	Bloom's K-level	Q. No.	SECTION – A (10 X 1 = 10 Marks) Answer <u>ALL</u> Questions.
CO1	K1	1.	What is octal number for the binary equivalent 11100? a) 30 b) 34 c) 32 d) 31
CO1	K2	2.	Gray code for 1101 is given by. a) 1111 b) 1011 c) 1001 d) 0101
CO2	K1	3.	The boolean law $A+1=$ a) A b) A' c) 1 d) 0
CO2	K2	4.	A group of four 1's that are horizontal or vertical or form a square in the k map is. a) quads b) octets c) pairs d) all the above
CO3	K1	5.	The BCD or binary-coded decimal of the number 15 is. a) 00001111 b) 1111 c) 00010101 d) 10101
CO3	K2	6.	What is the 2's complement of 13 is? a) 1101 b) 0010 c) 0011 d) 0111
CO4	K1	7.	A flip-flop is an. a) sequential circuit b) edge sensitive device c) synchronous device d) all the above
CO4	K2	8.	In RS flip flop, S & R inputs are 0, then the resulting Q is. a) 1 b) 0 c) No Change d) All above
CO5	K1	9.	If the input is serial and the and output is parallel, then it is. a) Serial in, serial out b) Serial in, parallel out c) Parallel in, serial out d) Parallel in, parallel out
CO5	K2	10.	Parallel to serial conversion is. a) Serial in, serial out b) Serial in, parallel out c) Parallel in, serial out d) Parallel in, parallel out

Course Outcome	Bloom's K-level	Q. No.	SECTION – B (5 X 5 = 25 Marks) Answer <u>ALL</u> Questions choosing either (a) or (b)
CO1	K3	11a.	Convert the binary number 1011011 to decimal, octal and hexadecimal number.
CO1	K3	11b.	(OR) Examine on Excess-3 code and convert the decimal number 7 to Excess-3 code.
CO2	K3	12a.	Illustrate the sum of products method.
CO2	K3	12b.	(OR) Construct K-map for the switching function $F = \Sigma (1,3,5,7)$.
CO3	K4	13a.	Calculate binary addition for 1001+111, 1011010+101101.
CO3	K4	13b.	(OR) Examine 2's complement representation.
CO4	K4	14a.	Identify the working principle of RS flip flop.
CO4	K4	14b.	(OR) Explain the operation of D flip flop with truth table.
CO5	K5	15a.	Justify how Serial in parallel out works.
CO5	K5	15b.	(OR) Discuss Parallel in parallel out process.

Course Outcome	Bloom's K-level	Q. No.	SECTION – C (5 X 8 = 40 Marks) Answer <u>ALL</u> Questions choosing either (a) or (b)
CO1	K3	16a.	Convert the decimal number $(68)_{10}$ to binary, octal and hexadecimal number.
CO1	K3	16b.	(OR) Interpret on the basic gates with symbols and truth table.
CO2	K4	17a.	Solve the switching function $F = \Sigma (4,5,6,7,12,13,14,15)$ using Karnaugh map.
CO2	K4	17b.	(OR) Examine the product of sums method.
CO3	K4	18a.	Analyze on multiplexer with diagram and truth table.
CO3	K4	18b.	(OR) Investigate binary subtraction rules and solve 1010-101.
CO4	K5	19a.	Recommend on edge triggered RS flip flop.
CO4	K5	19b.	(OR) Show how JK flip flop operates.
CO5	K5	20a.	Discuss the various types of registers.
CO5	K5	20b.	(OR) Justify the concept of universal shift register.