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COER University END SEMESTER EXAMINATION, EVEN SEM 2022-23

Total Marks: 100 : 3 hours Semester : II gram Name : BCA **Course Code: BCA211**

rse Name : Basics of Digital Electronics stions are compulsory. No student is allowed to leave the examination hall before the completion of the

e: All questions are compuls	bry. No student is allowed to leave the same
	and department of the second
	CO BL

	- 1 Coming E Marks	CO	DL
No 1	Attempt Any Four Parts. Each Question Carries 5 Marks.	CO 1	2
(a)	The octal equivalence of (11001101.111)2 is.	CO 1	2
(b)	Convert the following numbers as indicated;		
(-)	a) $(11110101)_2 = (?)_{10}$		
	b) $(D9C.24D)_{16} = (?)_2$	CO 3	3
(c)	Design a 2 to 4 line decoder circuit.	CO 4	3
(d)	Define Page Around Condition in J-K Flip Flop.	CO 4	3
(e)	Write the excitation tables for JK and 1 Flip-Flop.	СО	BL
The Australia	Attempt Any Four Parts. Each Question Carries 5 Marks.		
No 2	Perform the subtraction in the following unsigned binary number using 2's	20.1	2
(a)	Perform the subtraction in the following	CO 1	
	complement method.		-
	$(23)_{10} - (39)_{10}$	CO 2	1
(b)	(23) ₁₀ – (39) ₁₀ Encode the binary word 1011 into seven bit even parity hamming code.	CO 3	3
(c)	Design a 4 bit binary parallel Adder and the explain operation in detail.	CO 3	3
(d)	Design a 1:4 De-multiplexer circuit.	CO 2	3
(e)	Implement the following function by using Basic gates: $ \overline{R} = \frac{1.4 \text{ De-HattipleAS}}{1.4 \text{ De-HattipleAS}} + \frac{1.4 \text{ De-HattipleAS}}{1.4 $	1	
(3)	Implement the following function by using $S = \bar{A}BCD + B\bar{C}\bar{D} + A\bar{C} + AB\bar{C}$		
-			

4	- 1 Constion Carries 5 Marks.	CO	BL
Q. No 3	Attempt Any Four Parts. Each Question Carries 5 Marks.	CO 1	2
(-)	Convert F(A.B.C)= A'B+BC+A'B'C' Into the equivalent canonical	CO 4	3
(b)	Design J-K flip-flop using T flip-flop.	CO 5	2
(c)	Design J-K flip-flop using 1 flip-flop. Explain 4-bit Asynchronous ripple counters and also draw it's output waveform.	CO 3	2,3
	Design and explain 8:1 MUX. What is priority Encoder? Design and explain working of a 4-input priority encoder.	CO 3	2,5
(e)	What is priority Encoder? Design and explain working or a suppose	7	

(0)	Tab Question Carries 10 Marks.	СО	BL
4	Attempt Any Two Parts. Each Question Carries 10 Marks. Simplify following function using K-Map and implement by using Basic Gates only.	CO 2	1
(-)	Simplify following function using T that T is T in	CO 5	2
(c)	Perform the following: 1. (480.21) ₁₀ to (?) ₆ 2. (E4465.225) ₁₆ to (?) ₈	CO 1	2
	3. $(354)_7 + (624)_7$		

	Total Fach Question Carries 10 Marks.	CO	BL
(a)	Simplify following function using $t = t + t = 0$	CO 2	1
(b)	Explain the operation of master slave flip-flop and show how the face around condition	CO 4	3
(c)	is eliminated in it. i) Design 2-bit synchronous-up counter by using JK flip-flop. ii) Design 2-bit synchronous-up counter by using D flip-flop.	CO 5	5
	11) Design 2-on oyner——End of Paper————————————————————————————————————		

COER University
END SEMESTER EXAMINATION, EVEN SEM 2022-23

Total Marks: 100 **Time** : 3 hours Semester : II **Program Name: BCA**

Course Code : BCA211 Course Name : Basics of Digital Electronics

Note: All questions are compulsory. No student is allowed to leave the examination hall before the completion of the

Q. No 1	Attempt Any Four Parts. Each Question Carries 5 Marks.	СО	BL
_	Attempt any rour Parts, Each Question Carries 5 Marks	CO 1	2
(a)	The octal equivalence of (11001101.111)2 is.	CO 1	2
(b)	Convert the following numbers as indicated;	CO 1	_
	a) $(11110101)_2 = (?)_{10}$		
	b) $(D9C.24D)_{16} = (?)_2$		-
(c)	Design a 2 to 4 line decoder circuit.	CO 3	3
(d)	Define Race Around Condition in J-K Flip Flop.	CO 4	3
(e)	Write the excitation tables for JK and T Flip-Flop.	CO 4	3
Q. No 2	Attempt Any Four Parts. Each Question Carries 5 Marks.	СО	BL
(a)	Perform the subtraction in the following unsigned binary number using 2's complement method.	co 1	2
	$(23)_{10} - (39)_{10}$	CO 2	1
(b)	Encode the binary word 1011 into seven bit even parity hamming code.	_	_
(c)	Design a 4 bit binary parallel Adder and the explain operation in detail.	CO 3	3
(d)	Design a 1:4 De-multiplexer circuit.	CO 3	3
(e)	Implement the following function by using Basic gates: $f = \bar{A}BCD + B\bar{C}\bar{D} + A\bar{C} + AB\bar{C}$	CO 2	3

Q. No 3	Attempt Any Four Parts. Each Question Carries 5 Marks.	CO	BL
(a)	Convert F(A,B,C)= A'B+BC+A'B'C' into the equivalent canonical SOP form.	CO 1	2
(b)	Design J-K flip-flop using T flip-flop.	CO 4	3
(c)	Explain 4-bit Asynchronous ripple counters and also draw it's output waveform.	CO 5	2
(d)	Design and explain 8:1 MUX.	CO 3	2,3
(e)	What is priority Encoder? Design and explain working of a 4-input priority encoder.	CO 3	2,5

Q. No 4	Attempt Any Two Parts. Each Question Carries 10 Marks.	СО	BL
(a)	Simplify following function using K-Map and implement by using Basic Gates only.	CO 2	1
	$F(A,B,C,D) = \Sigma m(2, 4, 6, 10, 12, 14, 15) + \Sigma d(0, 1, 5, 7, 8, 13)$		_
(b)	Design MOD- 10 synchronous counter using T flip flop.	CO 5	2
(c)	Perform the following: 1. (480.21) ₁₀ to (?) ₆ 2. (E4465.225) ₁₆ to (?) ₈ 3. (354) ₇ + (624) ₇	CO 1	2

Q. No 5	Attempt Any Two Parts. Each Question Carries 10 Marks.	CO	BL
(a)	Simplify following function using K-Map and implement by using NAND Gates only. $F(W,X,Y,Z) = \Pi M (0, 3, 9, 11, 12) + \Sigma d(6, 7, 14, 15)$	CO 2	1
(b)	Explain the operation of master slave flip-flop and show how the race around condition is eliminated in it.	CO 4	3
(c)	i) Design 2-bit synchronous-up counter by using JK flip-flop.ii) Design 2-bit synchronous-up counter by using D flip-flop.	CO 5	5

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