



**Department of Electronics and Communication Engineering
Innovative Teaching Methods**

Activity Title	Technical Quiz
Faculty Name/Department	Mrs.I.S.Suganthi /ECE
Mapped Course Name & Code	EC3352-Digital System Design
Date	20.6.2022
Benefitted Students (Year / Sem / Dept)	II/III/ECE
Topic	K map Simplifications
Description	Digital way of data processing can execute Conducting Quiz program to initiate effective way of learning for students about digital logic circuits
Course Outcomes (CO)	CO1: To present the fundamentals of digital circuits and simplification methods
Performance Indicator (PI)	1.4.1
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Activity Photos	

Topics/ Questions:

1. A Karnaugh map (K-map) is an abstract form of _____ diagram organized as a matrix of squares.
 - a) Venn Diagram
 - b) Cycle Diagram
 - c) Block diagram
 - d) Triangular Diagram
2. There are _____ cells in a 4-variable K-map.
 - a) 12
 - b) 16
 - c) 18
 - d) 8
3. The K-map based Boolean reduction is based on the following Unifying Theorem: $A + A' = 1$.
 - a) Impact
 - b) Non-Impact
 - c) Force
 - d) Complementarity
4. Each product term of a group, $w'.x.y'$ and $w.y$, represents the _____ in that group.
 - a) Input
 - b) POS
 - c) Sum-of-Minterms
 - d) Sum of Maxterms
5. K-map is used for _____.
 - a) logic minimization
 - b) expression maximization
 - c) summing of parity bits
 - d) logic gate creation
6. Simplify the expression using K-maps: $F(A, B, C, D) = \Sigma(1, 3, 5, 6, 7, 11, 13, 14)$.
 - a) $AB + BC'D + A'B'C$
 - b) $BCD' + A'C'D + BD'$
 - c) $A'D + BCD + A'BC + AB'C'$
 - d) $AC'D' + BC + A'BD + C'D'$
7. Simplify the expression using K-maps: $F(A, B, C) = \pi(0, 2, 4, 5, 7)$.
 - a) $(x+y)(y+z)(x+z)(x'+z')$
 - b) $(x+z')(y+z)(x+y)$
 - c) $(x+y'+z)(x+z')$
 - d) $(y'+z')(x'+y)(z+y')$

8. Who has invented K-map?
- Maurice Karnaugh
 - Edward Veitch
 - George Boole
 - Adam Smith
9. How many cells are there for an 8-variable K-Map?
- 421
 - 1048
 - 256
 - 375
10. Simplify the expression using K-maps: $F(A,B,C) = \Sigma (1,3,5,6,7)$.
- $AC' + B'$
 - $AB + C$
 - $AB' + B'C'$
 - $A'BC + B'C + AC$

Marks:

Group Name	Reg No.	Topic	Total Marks
			(10)
A	311821106001	K-map	9
	311821106002	K-map	9
	311821106003	K-map	9
	311821106004	K-map	9
	311821106005	K-map	9
	311821106006	K-map	9
	311821106007	K-map	9
	311821106008	K-map	9
	311821106009	K-map	9
	311821106010	K-map	9
B	311821106011	K-map	8
	311821106012	K-map	8
	311821106013	K-map	8
	311821106014	K-map	8
	311821106015	K-map	8
	311821106016	K-map	8
	311821106017	K-map	8

	311821106018	K-map	8
	311821106019	K-map	8
	311821106020	K-map	8
	311821106021	K-map	8
C	311821106023	K-map	3
	311821106024	K-map	3
	311821106025	K-map	3
	311821106026	K-map	3
	311821106027	K-map	3
	311821106028	K-map	3
	311821106030	K-map	3
	311821106031	K-map	3
	311821106032	K-map	3
D	311821106033	K-map	5
	311821106034	K-map	5
	311821106035	K-map	5
	311821106036	K-map	5
	311821106302	K-map	5
	311821106303	K-map	5
	311821106304	K-map	5

Outcome:

- Apply different methods used for simplification of Boolean functions.
- Inculcate methodology understand the concept easily.