

GYANMANJARI INNOVATIVE UNIVERSITY
GYANMANJARI DIPLOMA ENGINEERING COLLEGE
Diploma Engineering – Mid Semester Examination (MSE)-W2025

Enrollment No.: _____

Subject Code: DETEE10101

Subject Name: Basics of Digital Electronics

Time: 11:00 AM to 01:00 PM

Date: 08/10/2025

Semester: 01

Total Marks: 60

Instructions:

1. Question No. 1 is compulsory.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		Marks
Q.1	(a) Explain Octal number system with example. ઓક્ટલ નંબર સિસ્ટમ ઉદાહરણ સાથે સમજાવો.	05
	(b) Explain Commutative Law. કોમ્યુટેટિવ નિયમ સમજાવો.	05
	(c) What is Number system? Explain Types of number system in detail. નંબર સિસ્ટમ એટલે શું? નંબર સિસ્ટમના પ્રકારોની વિગતવાર સમજાવો.	10
Q.2	(a) Do as Directed: 1. $(191)_{10} = (?)_2$ 2. $(1010101)_2 = (?)_{10}$ 3. $(457)_{10} = (?)_8$ 4. $(764)_8 = (?)_{10}$ 5. $(34765)_8 = (?)_2$	05
	(b) Find 2's compliment for given: 1. (10101010111) 2. (11011) 3. (10111011)	05
	OR	
	(b) Give Subtraction using 1's Complement 1's complement ની મદદથી બાદબાકી કરો 1) $10101 - 1011$ 2) $1011 - 10010$	05
	(c) Explain NAND as universal gate. NAND ને યુનિવર્સલ ગેટ તરીકે સમજાવો.	10
	OR	
	(c) Explain NOR as universal gate. NOR ને યુનિવર્સલ ગેટ તરીકે સમજાવો.	10
Q.3	(a) Explain Gates in detail. લોજિક ગેટ્સનો વિગતવાર સમજાવો.	05
	(b) Reduce : $F = A + B [AC + (B + C')D]$	05
	(c) Solve Kmap $F = \Pi M (0,1,2,5,7,8,9,10,14,15)$, Also draw logic Circuit.	10

OR

- Q.3 (a) Explain Min term in detail. 05
મિનટર્મ (Min Term) શું છે? વિગતવાર સમજાવો.
- (b) Explain K Map in detail. K-Map શું છે? 05
તેનું વિગતવાર સમજૂતી આપો.
- (c) Solve Kmap $F = \sum m (1,3,5,6,7,12,13,14) + d (2,4)$ Also Draw 10
Logic Circuit.