Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY

Summer Examination-2018

Subject Name: Digital Electronics

Subject Code: 2TE03DEL1 **Branch: Diploma (CE)**

Semester: 3 **Date: 22/03/2018** **Time: 02:30 To 05:30** **Marks: 70**

Instructions:

(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

Q-1 **Attempt the following questions:** **(14)**

a) 1st complement of 1010 is
a) 1101 b) 0101 c)1100 d)1111

b) 2nd complement of 1010 is
a) 1101 b) 0101 c)1100 d)0110

c) What is the full form of ASCII?
a) American State Code for Information Interchange
b) American Standard Code for Information Interchange
c) Advanced Standard for Information Interchange
d) American Standard Code for Interactive Information

d) $(115)_{10}$ to binary
a) 1100001 b) 1111000 c) 1110011 d) 1110001

e) What is full form of RAM?
a) Random Access memory
b) Read all memory
c) Read access memory
d) Random all memory

f) 11000 / 1000 = _____
a) 10 b) 01 c) 11 d) 00

g) $(1111)_2$ to decimal
a) 14 b) 16 c) 17 d) 15

h) What full form of EBCDIC?
a) Extended Binary Coded Decimal Interchange Code
b) Extended Binary Coded Digit Interchange Code
c) External Binary Coded Digit Interchange Code
d) External Binary Coded Decimal Interchange Code

i) Find 9's complement of 456
a) 542 b) 543 c) 544 d) 545

j) Find 10's complement of 123
a) 875 b) 876 c) 877 d) 878

k) Which number system has a base of 16?
a) Decimal b) Octal c) Hexadecimal d) None

l) Which of these sets of logic gates are designated as universal gates?
a) NOR, NAND. b) XOR, NOR, NAND.
c) OR, NOT, AND. d) NOR, NAND, XNOR.

m) A Binary number system has how many digits.
a) 0 b) 1 c) 2 d) 10

n) In digital systems, 1 byte is equal to _____ bit(s).
a) 1 b) 1 c) 4 d) 8

Attempt any four questions from Q-2 to Q-8

Q-2		**Attempt all questions**	
	(a)	Explain half Adder and full adder.	**(7)**
	(b)	Explain Karnaugh Map.	**(7)**
Q-3		**Attempt all questions**	
	(a)	Explain 4X1 Multiplexer.	**(7)**
	(b)	Explain types of ROM.	**(7)**
Q-4		**Attempt all questions**	
	(a)	Explain NOR as universal gate.	**(7)**
	(b)	Explain 3 to 8 decoder.	**(7)**
Q-5		**Attempt all questions**	
	(a)	Explain serial in parallel out shift register.	**(7)**
	(b)	Explain all Logic gates with their truth tables.	**(7)**
Q-6		**Attempt all questions**	
	(a)	Explain J-K flip-flop	**(7)**
	(b)	Draw block diagram of digital to analog converter.	**(7)**
Q-7		**Attempt all questions**	
	(a)	Explain half subtractor and full subtractor.	**(7)**
	(b)	Explain 4-bit asynchronous binary counter.	**(7)**
Q-8		**Attempt all questions**	
	(a)	Simplify: (A + C) (AD + AD) + AC + C	**(5)**
	(b)	Find POS for function f(A,B,C) = (A+B) (A + B') (B' + C')	**(5)**
	(c)	Explain D flip-flop.	**(4)**

Q-1 **Attempt the following questions:** **(14)**

a) 1010 નુ 1's કૉમ્પ્લિમેંટ

a) 1101 b) 0101 c)1100 d)1111

b) 1010 નુ 2's કૉમ્પ્લિમેંટ

a) 1101 b) 0101 c)1100 d)0110

c) What is the full form of ASCII?

a) American State Code for Information Interchange
b) American Standard Code for Information Interchange
c) Advanced Standard for Information Interchange
d) American Standard Code for Interactive Information

d) (115)10 નુ બાઇનરી શુ થશે?

a) 1100001 b) 1111000 c) 1110011 d) 1110001

e) RAM નુ આખુ નામ શુ છે?

a) Random Access memory
b) Read all memory
c) Read access memory
d) Random all memory

f) 11000 / 1000 = _____

a) 10 b) 01 c) 11 d) 00

g) $(1111)_2$ નુ ડેસિમલ શુ થશે?

a) 14 b) 16 c) 17 d) 15

h) EBCDIC નુ આખુ નામ શુ છે?

a) Extended Binary Coded Decimal Interchange Code
b) Extended Binary Coded Digit Interchange Code
c) External Binary Coded Digit Interchange Code
d) External Binary Coded Decimal Interchange Code

i) 456 નુ 9's કૉમ્પ્લિમેંટ શોધો

a) 542 b) 543 c) 544 d) 545

j) 123 નુ 10's કૉમ્પ્લિમેંટ શોધો

a) 875 b) 876 c) 877 d) 878

k) નીચેના માથી કઈ નંબર સિસ્ટમમાં આધાર 16 હોય છે?

a) Decimal b) Octal c) Hexadecimal d) None

l) નીચેનામાથી ક્યાં ગેટ યુનિવર્સલ ગેટ તરીકે ઓળખાય છે?

a) NOR, NAND. b) XOR, NOR, NAND.
c) OR, NOT, AND. d) NOR, NAND, XNOR.

m) બાઇનરી નંબર સિસ્ટમ કેટલા અંકો ની બનેલી છે?

a) 0 b) 1 c) 2 d) 10

n) ડિજિટલ સિસ્ટમમાં 1 બાઇટ બરાબર કેટલા બિટ્સ થાય?

a) 1 b) 1 c) 4 d) 8

Attempt any four questions from Q-2 to Q-8

Q-2		**Attempt all questions**	
	(a)	હાફ એડર અને ફુલ એડર સમજાવો.	**(7)**
	(b)	કરનાફ મેપ સમજાવો.	**(7)**
Q-3		**Attempt all questions**	
	(a)	4x1 મલ્ટિપલેક્સર સમજાવો.	**(7)**
	(b)	રોમ ના પ્રકાર જણાવો	**(7)**
Q-4		**Attempt all questions**	
	(a)	NOR ગેટને યુનિવર્સલ ગેટ તરીકે સમજાવો.	**(7)**
	(b)	3x8 ડિકોડર સમજવો.	**(7)**
Q-5		**Attempt all questions**	
	(a)	સીરિયલ-ઇન અને પેરલેલ-આઉટ સિફ્ટ રજીસ્ટર સમજાવો.	**(7)**
	(b)	બધા જ પ્રકારના લોજિક ગેટ્સ ટ્રુથ ટેબલ સાથે સમજાવો.	**(7)**
Q-6		**Attempt all questions**	
	(a)	J-K ફ્લિપ ફ્લોપ સમજાવો.	**(7)**
	(b)	ડિજિટલ ટૂ એનાલોગ કન્વર્ટર આકૃતિ સાથે જણાવો.	**(7)**
Q-7		**Attempt all questions**	
	(a)	હાફ સબટ્રેક્ટર અને ફુલ સબટ્રેક્ટર સમજાવો.	**(7)**
	(b)	4-bit એસિંક્રનસ બાઇનરી કાઉંટર સમજાવો.	**(7)**
Q-8		**Attempt all questions**	
	(a)	સાદું રૂપ આપો: (A + C)(AD + AD) + AC + C	**(5)**
	(b)	POS સ્વરુપ શોધો f(A,B,C) = (A+B) (A + B') (B' + C')	**(5)**
	(c)	D ફ્લિપ ફ્લોપ સમજાવો.	**(4)**