

C.U.SHAH UNIVERSITY

Winter Examination-2018

Subject Name : Digital Electronics

Subject Code : 2TE03DEL1

Branch: Diploma (CE)

Semester : 3

Date : 29/11/2018

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.
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Q-1

Attempt the following questions:

(14)

- a) The NOT gate have how many input?
a) One b) Two c) Three d) Many
- b) What is 2's complement of 11010?
a) 10101 b) 00110 c) 00110 d) 01010
- c) The octal system uses powers offor positional values.
a) 8 b) 16 c) 2 d) 10
- d) Convert decimal to binary : 11
a) 0011 b) 1100 c) 1110 d) 1011
- e) There arebits in one byte.
a) 8 b) 16 c) 2 d) 4
- f) Which gate is known as a "all or nothing gate"?
a) AND b) OR c) NAND d) NOR
- g) The basic addition circuit is called.....
a) Half Adder b) Full Adder c) a) & b) both d) None of above
- h) Give full form of ASCII is
a) American State Cube for Information Interchange
b) Advanced Standard Case for Information Interchange
c) American Standard Code for Information Interchange
d) American Standard Code for Interactive Information
- i) Convert binary to octal 100011
a) 40 b) 41 c) 42 d) 43
- j) Any machine/ devices usually operates on ___system.
a) Binary b) Octal c) Hexadecimal d) Decimal
- k) Which code is non weighted code?
a) 8421 b) 2421 c) Gray Code d) All of above.
- l) What is the full form of DTL?
a) Data Transistor Logic b) Diode transistor Logic
c) Device Transistor Logic d) None of above
- m) Complement is also called
a) Multiplier b) Divider c) Inverter d) Converter



- n) In positive logic representation which bit represents high?
a) 1 b) 0 c) a) & b) both d) None of above

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

- Q-2 Attempt all questions (14)**
(a) List types of basic gates. And explain all the basic gates. (07)
(b) Write characteristics of MOS and CMOS families. (07)
- Q-3 Attempt all questions (14)**
(a) Write a note on De Morgan's theorems. (07)
(b) Explain 2 variable K-map. (07)
- Q-4 Attempt all questions (14)**
(a) Explain full adder with proper diagram. (07)
(b) Give the answer of following questions. (07)
 1) convert binary to decimal: 10101, 1001011, 1111
 2) convert octal to binary: 234, 635
 3) Add the binary number : 1011+ 1101, 10001+11101
- Q-5 Attempt all questions (14)**
(a) What do you mean by multiplexer? Write a note on multiplexer. (07)
(b) Explain S-R flip flop. (07)
- Q-6 Attempt all questions (14)**
(a) Write a note on ROM, PROM and EPROM. (07)
(b) Explain register. (07)
- Q-7 Attempt all questions (14)**
(a) Explain full subtractor. (07)
(b) Which are universal gates? List types of universal gates and explain any 1 with diagram. (07)
- Q-8 Attempt all questions (14)**
(a) Explain successive approximation A/D converter. (07)
(b) Write a note on analog to digital converter. (07)



Q-1

Attempt the following questions:

(14)

- a) NOT gate ને કેટલા પ્રકાર છે?
a) One b) Two c) Three d) Many
- b) 11010 નું 2's complement લખો.
a) 10101 b) 00110 c) 00110 d) 01010
- c) Octal systemપાવર ની પોસીશન વેલ્યુ નો ઉપયોગ કરે છે?
a) 8 b) 16 c) 2 d) 10
- d) ડેસીમલ થી બાયનરીમાં ફેરવો : 11
a) 0011 b) 1100 c) 1110 d) 1011
- e) એક બાયટ એટલેબીટ્સ
a) 8 b) 16 c) 2 d) 4
- f) નીચેના પૈકી કયો ગેટ "all or nothing gate" તરીકે ઓળખાય છે?
a) AND b) OR c) NAND d) NOR
- g) બેસિક એડીશન સર્કિટ ને.....કહેવાય છે.
a) Half Adder b) Full Adder c) a) & b) બંને d) એક પણ નહિ
- h) ASCII નું પૂરું નામ
a) American State Cube for Information Interchange
b) Advanced Standard Case for Information Interchange
c) American Standard Code for Information Interchange
d) American Standard Code for Interactive Information
- i) બાયનરી થી ઓક્ટલ માં ફેરવો. 100011
a) 40 b) 41 c) 42 d) 43
- j) કોઈ ડીવાયસ સામાન્ય રીતેપર ઓપરેટ થાય છે.
a) Binary b) Octal c) Hexadecimal d) Decimal
- k) નીચેના પૈકી કયો કોડ non weighted છે?
a) 8421 b) 2421 c) Gray Code d) ઉપરન બધા .
- l) DTL નું પૂરું નામ લખો.?
a) Data Transistor Logic b) Diode transistor Logic
c) Device Transistor Logic d) None of above
- m) કોમ્પ્લીમેન્ટ ને બીજા કયા નામથી ઓળખાય છે?
a) Multiplier b) Divider c) Inverter d) Converter
- n) પોસિટીવ લોજીક રીપ્રેઝન્ટેશનમાં કયો બીટ high દર્શાવે છે?
a) 1 b) 0 c) a) & b) both d) એક પણ નહિ

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

Q-2

Attempt all questions

(14)

- (a) બેસિક ગેટ્સ ના પ્રકાર લખો. અને તેને સમજાવો. (07)
- (b) MOS અને CMOS ની characteristics લખો. (07)



- Q-3** **Attempt all questions** (14)
- (a) De Morgan's theorems પર નોંધ લખો. (07)
- (b) 2 variable K-map સમજાવો. (07)
- Q-4** **Attempt all questions** (14)
- (a) full adder ડાયાગ્રામ સાથે સમજાવો. (07)
- (b) નીચેના પ્રશ્નના જવાબ આપો (07)
- 1) બાયનરી થી ડેસિમલ માં ફેરવો : 10101, 1001011, 1111
- 2) ઓક્ટલ થી બાયનરી માં ફેરવો.: 234, 635
- 3) બાયનરી નંબર ના સરવાળા કરો. : 1011+ 1101, 10001+11101
- Q-5** **Attempt all questions** (14)
- (a) Multiplexer એટલે શું થાય? multiplexer. વિષે નોંધ લખો. (07)
- (b) S-R flip flop સમજાવો. (07)
- Q-6** **Attempt all questions** (14)
- (a) નોંધ લખો.ROM, PROM and EPROM. (07)
- (b) Register સમજાવો. (07)
- Q-7** **Attempt all questions** (14)
- (a) Full subtractor સમજાવો. (07)
- (b) કયા universal gates છે? universal gates ના પ્રકાર લખો અને કોઈ પણ એક ડાયાગ્રામ સાથે સમજાવો. (07)
- Q-8** **Attempt all questions** (14)
- (a) successive approximation A/D converter સમજાવો.
- (b) નોંધ લખો- analog to digital converter.

