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## C.U.SHAH UNIVERSITY

 Winter Examination-2018Subject Name : Computer Organization and Architecture

Subject Code : 4CS03COA1
Semester : 3

Date : 27/11/2018

Branch: M.Sc.C.A. \& I.T. (Integrated)
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:
a) 1 byte $=$ $\qquad$ bit.
A. 8
B. 16
C. 32
D. 64
b) In bollean algebra $\mathrm{A}+\mathrm{A}^{\prime}=$ $\qquad$
A. 1
B. 0
C. 2
D. 4
c) In bollean algebra $\mathrm{AA}^{\prime}=$ $\qquad$
A. 1
B. 0
C. 2
D. 4
d) In bollean algebra $\mathrm{A}+\mathrm{A}=$ $\qquad$
A. A
B. 0
C. $A^{\prime}$
D. None of these
e) In bollean algebra $\mathrm{A}+1=$ $\qquad$
A. 1
B. 0
C. 2
D. 4
f) Define term : Digital electronics
g) Define term : Analog electronics
h) $\qquad$ is types of RAM.
A. Static RAM
B.Direct RAM
C. Symmetric RAM
D. None of these
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i)
A. EPROM
B. EDPROM
C.ETPROM
D. None of these
j) Define term : Computer
k) Define term : Hardware
l) Half adder is $\qquad$ circuit.
A. Sequential
B. Combinational
C. both
D. None of these
$m^{\prime}$ T- Flipflop is $\qquad$ circuit.
A. Sequential
B.Combinational
C. both
D.None of these
n) Register is $\qquad$ device.
A. Sequential
B. Combinational
C. Storage
D. None of these

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

## Q-2 Attempt all questions

a) What is Combinational Circuit? Explain Full adder with Necessary circuit diagram.
b) Explain Full Subtractor with Necessary circuit diagram.

Q-3 Attempt all questions
a) What is gate? Enlist types of Gate? Explain with truth table and circuit diagram.

Q-4 Attempt all questions
a) What is Sequential Circuit? Explain JK flip flop with truth table and circuit diagram.
b) Write a brief note on Decoder

## Q-5 Attempt all questions

a) What is Perfect Induction Method? Prove Following through perfect induction method
(1) $(\mathrm{AB})^{\prime}=\mathrm{A}^{\prime}+\mathrm{B}^{\prime}$
(2) $(\mathrm{A}+\mathrm{B})^{\prime}=\mathrm{A}^{\prime} \mathrm{B}^{\prime}$
b) Draw the Circuit diagram of Carry and Sum in Half Adder.

Q-6 Attempt all questions
a) What is Encoder? Explain with suitable diagram.
b) What is Multiplexer? Explain with suitable diagram.

Q-7 Attempt all questions
a) Explain Half Subtractor with diagram.
b) What is de-multiplexer? Explain with suitable diagram.

Q-8 Attempt all questions
a) What is Floating point representation? Explain with suitable example.
b) Explain BCD (Binary Coded Decimal) with suitable example.


